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IDRC NETWORKS

Reference Material

February 1991

Office of Planning & Evaluation

PREFACE

This dossier is a reference source on current reports and articles on the use of networks. Its' contents are intended for a variety of uses: as input to planning future network activities; to provide methodological and conceptual help to those designing network evaluations; to give a sense of the depth and breadth of policy relevant material available on this topic.

As a working document, it can be expanded as new evaluation studies are completed, or as new literature is uncovered. As the Centre's methodological experience in evaluating networks grows, a methodology section could be included as a background for conducting further network studies. It is expected that this dossier will be a nucleus around which various Centre units would build up their own information relative to their particular network concerns.

Containing as it does some of the basic formative writing on the concept, this document should provide some common points of departure for work in the Centre. The end result would be a high degree of comparability and synergism among the studies which use this report as a background source. As it is used, OPE expects to receive comments from users suggesting additions or revisions. We would also expect to append future significant studies, building up a Centre-wide dossier on Centre experience as it builds.

Office of Planning and Evaluation
September 1991

NETWORKS REFERENCE MATERIAL

CONTENTS

APPROACH

1. Network Policy Issues
2. Evaluating Networks - The Valverde Approach
3. Basic Data for an Overview of Centre-wide use of Networks

NETWORK POLICY ISSUES

When carrying out evaluations, Centre units will be addressing questions of particular interest to them. Among these questions will be issues of interest elsewhere in the Centre. A check list of key issues of interest across the Centre is proposed below as a stimulus to the identification of divisional network concerns. A standardized set of issues, accepted across the Centre would promote synergy and comparability across the resulting studies.

This list was generated with minimal consultation. It requires further elaboration as it is reviewed, discussed and tested.

1. Contribution to National Research Capacity:

Are Centre networks successful in enhancing the national research environment? (In terms of strengthening technical and management capacities.) How do national programs view the network?

2. Contribution to National and /or Regional Development Efforts:

Is the network compatible with and does it promote national/regional research and development priorities? Are research outputs from network members used in national development programs/policies?

3. Contribution to Fostering Interdisciplinary Linkages:

Do Centre network mechanisms encourage interdivisional and multidisciplinary exchanges or collaboration? Are networks providing input from other perspectives or disciplines?

4. Contribution to Fostering South-South Linkages and Collaborative Research:

What network activities link southern institutions, researchers? Do Centre networks result in increased collaborative research? (or are linkages primarily at the level of contacts, conferences, newsletters, training, exchange findings, etc?) Do linkages persist outside of the formal network activities?

5. Effectiveness in Meeting Network Objectives:

Were network objectives (those laid out at initiation of network) attained? Did the objectives evolve?

6. Efficient Use of Centre Resources:

Are networks a substitute for program officer/ Centre labour intensive role in developing and administering projects? What is the cost of the network mechanism (in dollars and person resources) compared with other mechanisms to achieve the same effects? Are networks more or less costly than other non-network projects for IDRC?

7. Sustainability of the Network:

(i) Financial: Is the network viable without IDRC funding? Was the termination of external support planned for? Does a strategy for financial sustainability exist? Is the network co-funded with other donors/institutions?

(ii) Relevance/usefulness: Is the network responsive to changing needs to ensure the usefulness and relevance of its activities.

8. Effective dissemination and utilization of research results:

Are networks successful in promoting the dissemination and utilization of research results? Do they develop mechanisms for the dissemination of findings, their utilization and to ensure usefulness to the intended beneficiaries and end-users?

Additional Policy Issues

R. Valentin, Information Sciences Division (30 April 1991):

Mechanisms used for networking. Were the mechanisms used, such as regular meetings, a newsletter, electronic messaging and bulletin boards, shared training courses, staff exchange, etc. effective and cost-efficient? Which mechanisms were most valuable?

Information flow. Was significant information exchanged within the network? What kinds of information? Was this carried out in any specific direction (e.g. North to South) or were there flows in all directions?

EVALUATING NETWORKS
The Valverde Approach

The current body of literature on networks reveals a paucity of information on analyzing and evaluating the network mechanism. This deficiency demonstrates the need for further work in the area of evaluation design and methodology. It is expected that a series of OPE and program division evaluations would contribute toward Centre learning on the best approaches to network evaluations.

The most significant contribution to date toward addressing network evaluation is made by D.G. Faris, in a 1990 manuscript entitled "Agricultural Research Networks as Development Tools." In his work, Faris compiles the existing contributions made toward evaluating networks and in particular reviews the contribution made by Valverde, from CGIAR. Faris' contribution is summarized below and is intended to serve as a resource guide to provide suggestions and provoke ideas on designing network evaluations.

1. Internal Evaluations[1]

a) Four sample methods are provided:

i) The **coordinator** through day-to-day contact with network members **can monitor and evaluate the operations.**

ii) The **steering committee** can satisfy **a monitoring and evaluating role during its meetings**. Review and planning meetings, can identify required change and action. The committee can plan formal internal evaluations drawing on the expertise of its members and others. The steering committee can arrange for an external evaluation when appropriate.

iii) **Workshops** at which members review issues of concern, for example research priorities or the networks' mandate.

iv) **Monitoring tours** can serve to identify problems and clarify research priorities.

b) Evaluation Resources to Consult:

Faris cites four pieces of work as examples of evaluation approaches. These works may be useful resources when designing an evaluation which suits the network and corresponds with the evaluators needs.

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[1] Information on evaluating networks is taken from the Faris manuscript, "Agricultural Research Networks as Development Tools".

i) A network can be evaluated on the basis of how well it has met its objectives.

This approach suggested by Doug Daniels[2] is effective providing the objectives are clearly written and that each consists of a single action. If possible, who is to complete the action and by when should be stipulated.

ii) Ideas for evaluating networks can be borrowed from evaluations of NARs. Evaluation activities in NARs were discussed at two workshops and are documented by Webster[3] and Daniels[4]. The focus is on the information that managers need to produce evaluations intended for publication. Evaluations are seen as a way of improving research management.

iii) CGIAR conducted a series of evaluations[5] as part of a study designed to evaluate the impact that CGIAR as an IARC's has had on particular NARs. The reports have largely followed the method outlined by Valverde which will be discussed below.

iv) Project evaluations can serve as models for network evaluation. For example Castronovo[6], has evaluated five agricultural information miniprojects in Latin America and has outlined the method and questionnaire employed. In addition USAID[7] has described the methodology used in evaluating projects.

5. IDRC network projects were evaluated by Nestel et al. in 1980. The terms of reference included assessing the extent and form of networking in IDRC-supported programs; an assessment of the network's influence outside of IDRC-supported projects; an investigation of how well links were maintained after support ceased and a comparison of the various methods used to build networks.

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[2] See Daniels, D. ed. 1987."Evaluation in National Agricultural Research: Proceedings of a workshop held in Singapore," 7-9 July 1986. IDRC-254e.

[3] See Webster, B., Valverde, C. and Fletcher, A. ed. "The Impact of Research on National Agricultural Development: A Report on the First International Meeting of National Agricultural Research Systems and the Second IFARD Global Convention, IFARD, ISNAR, CTA, EMBRAPA", Brasilia, 6-11 October, 1986. International Service for National Agricultural Research, The Hague, Netherlands, 1987.

[4] See Daniels, D. ed. 1987. "Evaluation in National Agricultural Research: Proceedings of a workshop held in Singapore," 7-9 July 1986. IDRC-254e.

[5] For example, see Nestel, B. "Indonesia and the CGIAR Centres: A Study of their collaboration in agricultural research", CGIAR Study Paper 10." 1985.

[6] See Castronovo, A. "Evaluation of five agricultural information mini-projects in Latin America". International Development Research Centre, Ottawa, IDRC-MR146e.

[7] See for example,Wilkinson, J.L., McKean, C. Meyer, R.E. et al. "Peru: Improved water and land use in the Sierra". USAID, Washington. Aid Project Impact Evaluation 54. 1984.

2. External Evaluations:

a) **Purpose:** An external network review can serve two purposes. First it can encourage network organizers to do their job efficiently thereby promoting a successful network. Second, an external review can inject new insights into the network.

b) **A review of Valverde's method of evaluating networks:**

In what follows is a summary of Valverde's work on network evaluation as reviewed by Faris. Valverde's design is regarded as one of the most significant contributions to date.

i) Aim:

Valverde's approach to externally assessing networks, aims to identify and analyze the key constraints and elements that influence the execution of agricultural research network programs.

The goal of Valverde's method is to allow for a systematic analysis and evaluation of a network. The evaluation should generate a list of weaknesses, strengths, threats and opportunities from which recommendations and appropriate adjustments to various network components can be made.

ii) Terms of Reference:

Valverde's evaluation is based on the following terms of reference:

Networks are regarded as having the following purposes:

- **Flexibility:** Capability of a network to change to meet alternatives in regional requirements.

- **Forum for exchange:** Provide a forum to share and debate differing views on the network, the research mandate, strategy, organisation, and planning. This will facilitate the identification of the network's strengths and weaknesses.

- **Support:** Assist NARS's programs and scientists to focus on and clarify their role in NARS.

For Valverde the above roles of flexibility, exchange and support are a basis on which to recommend necessary changes in planning, mission, and goals; to make short term research plans and budgets and to restructure management.

iii) Method:

Valverde's method:

- Does not follow fixed steps.
- Encompasses an assessment of research activities, regional exchange activities and network management.
- Depends on the nature and type of network.
- Relies on both informal and formal data collection.

iv) Execution:

The model for analysis and evaluation is carried out in four phases: (see figure 1)

- Revision of the past performance database.
- On-Site observation for verification of the network's activities - via contact with member through visits, interviews, questionnaires...
- Discussion and interchange of ideas and experience - related to the results from stage two. This will involve review panels, and the governing body and management, to clarify critical concerns and elements requiring adjustment.
- Final reporting with conclusions and recommendation based on the overall analysis and assessment of the network.

v) Components to be evaluated:

The model recognizes that a diversity of networks exists. Consequently, the following is a list of major network components which serve as a guideline to be adjusted to particular network settings.

Three network components:

- Structure and organization, management and operation.
- Program projects.
- Exchange activities.

Valverde proposed that:

- Each commodity or production factor, program or project be considered a subnetwork (sustained by a central coordinating organization responsible for its management).

- Data collection and analysis should centre on subnetworks as the focus of all activities/lines of action.

(vi) Information to collect and how:

- For the network itself the minimum information required is:

  - a summary of regional program antecedents;

  - a description of the program;

  - an account of factors that have influenced network activities;

  - the results obtained in association with network objectives (this information should be provided by the network coordinators and made available to the evaluators). What to collect:

  - For each subnetwork the database should include: an overview of the agricultural sector and the NARS, with background on the region and its priority problems. Quantifiable data on past performance including outputs is required to provide justification for specific trends.

  - Suggested methods of collection include interviews, questionnaires and indicators.

vii) Contents of the final report:

The evaluation should result in a report which contains comments, conclusions and recommendations which address the terms of reference and cover at a minimum the following issues:

- Network achievements in relation to mandate, objective and strategy, and the benefits and impact of the network.

- A prediction of the impact and direction of a network, especially if it extends beyond the initial objectives.

- The effects of the network's strengths and weaknesses on management, research output, and exchange activities.

- Recommendations to overcome networking constraints.

- Details of links and benefits from joint efforts between NARs and IARCs or other institutes.

- Descriptions of whether and how members' expectations are fulfilled; and

- Explanations about financial and long-term commitment to the network.

viii) Caution to Evaluators:

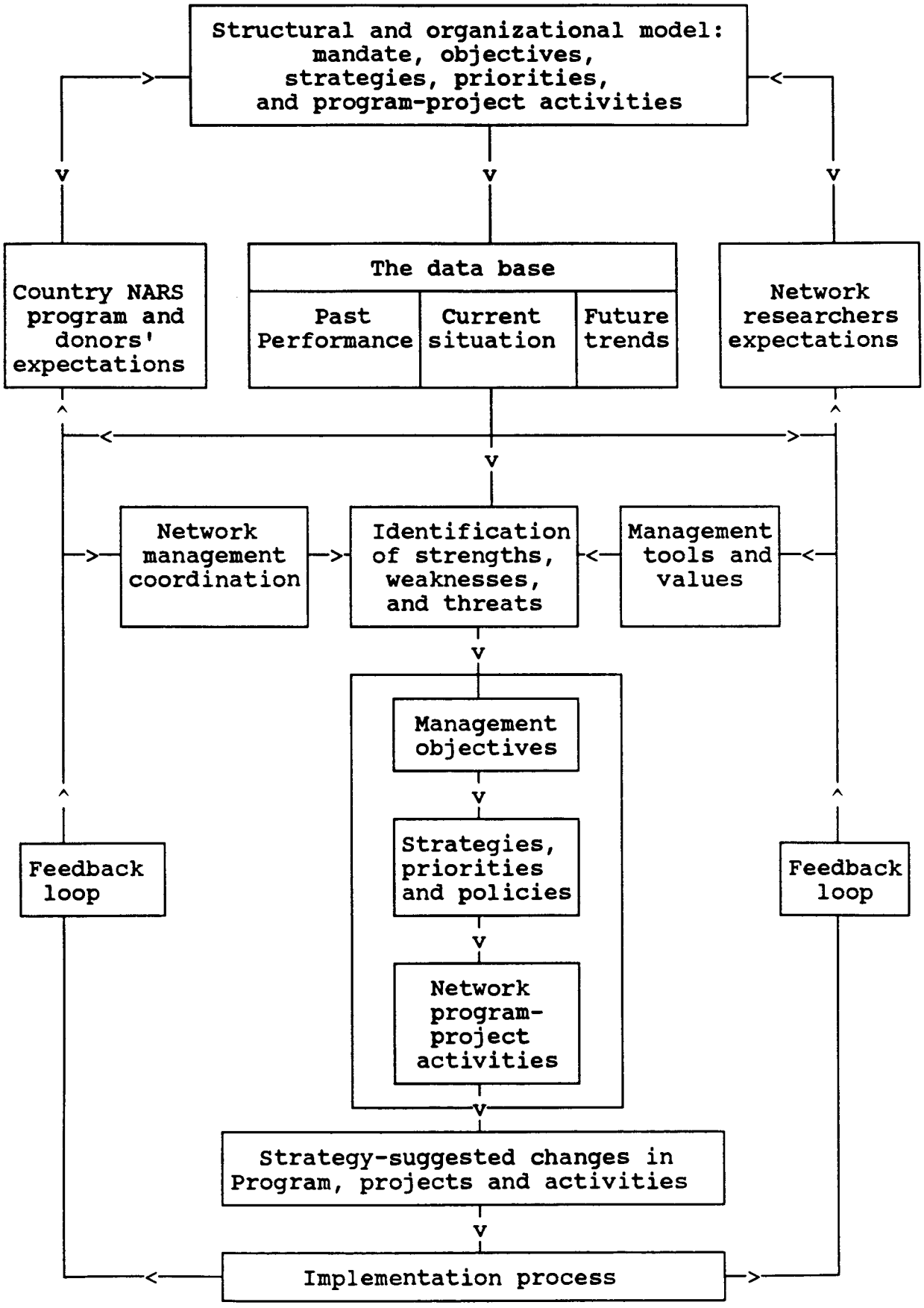
- Time the assessment so it does not clash with events vital to the network operation.

- Be familiar with all documentation.

- State the underlying assumption of the evaluation based on the terms of reference.

- Involve as many network members as possible in the evaluation and analysis.

- Include the assessment within the network's budget and make it economical.


Structural and organizational model: mandate, objectives, strategies, priorities, and program-project activities
Country NARS program and donors' expectations
The data base
Past Performance
Current situation
Future trends
Network researchers expectations
Network management coordination
Identification of strengths, weaknesses, and threats
Management tools and values
Management objectives
Strategies, priorities and policies
Network program-project activities
Feedback loop
Feedback loop
Strategy-suggested changes in Program, projects and activities
Implementation process

BASIC DATA

For an Overview of Centre-wide use of Networks

3

The following outline indicates the type of information required for an overview of the use of the network mechanism within the Centre.

DISTRIBUTION

How many network related projects has the centre supported over the 1980-1990 decade? (disaggregate by division and by year). Has support changed significantly over time? Are there different patterns of support among the divisions?

What types of networks does IDRC support? (Centre-wide and divisional trends). Networks could be grouped by sector, objectives, activities, members, organizations, geographical coverage, etc.

What percentage of network projects operate across divisions? To what extent do divisions collaborate? Has there been a change over the last decade in inter-divisional network collaboration as proposed in the 1980 Nestel et al. report?

What is the regional distribution of IDRC supported networks? Are certain research environments more hospitable to hosting networks than others? Are networks more suitable in environments with developed research capacities or are they a more useful mechanism in areas of low research capacity? Can networks be appropriate in both of these environments recognizing that they must preform different functions?

FUNDING PATTERNS

What has been the total expenditure on network related projects by division, by program, Centre-wide? What proportion of total budget expenditure does this constitute? Has there been a significant change over time?

What proportion of IDRC network projects or support for networks is co-funded with other organisations? What type of institutions are these?

What has been the Centre's expenditure on Network coordination and operation? (As opposed to research members.)

STUDIES

4. Project Completion Report Study
5. Analysis of the OPEIS database
6. Evaluation Abstracts

PROJECT COMPLETION REPORT NETWORKS STUDY

To acquire further information on IDRC's experience with network projects, OPE analyzed a selection of project completion reports (PCRs).[8]

Out of 26 PCRs that relate to networks, 15 were located and used in this sample.[9] Out of a potential 7 in Information Sciences 5 were located, 1 out of a possible 2 in Social Sciences and 9 out of a total of 17 in AFNS.

For the 15 projects in the sample, IDRC's actual expenditure totalled $3,391,137. The divisional breakdown is SS = $357,900[10]; IS = $1,409,534; AFNS = $1,623,703.

The coordinating agency[11] in 7 cases was an international institute, in 1 case a regional institute, in 5 cases a national institute and in 2 cases the donor institute, that is IDRC.

The function of the coordinator appears to encompass a variety of tasks. The range of activities, ordered by the frequency of citation, are: correspondence with and visits to projects and leaders; the provision of technological support; the provision of methodological support, liaison between projects; the organization of workshops and conferences; identification and initiation of project proposals, and the dissemination

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[8] For this study, an attempt was made to extract the following information from the PCRs: project name and number, division and program, funding amount plus joint funding, IDRC activity support, the coordinating agency, the network members plus their institution type, the type of network activity, other support given to members by IDRC, related projects, other phases, plus lessons learned. Given that the PCRs were not designed to provide this information, varying degrees of success resulted.

[9] PCRs were drawn from the OPE master file list which provides a current update of completed PCRs, as at 90/02/05. Appropriate projects were identified by a title search for the word "network", "cooperative systems" and "research systems". Reference numbers to other projects referred to in this list were also traced to see if a PCR existed. While 26 PCR's related to networks were identified as being "done", «OPE and the divisions were unable to establish the whereabouts of 11 reports. They were either unable to locate the report or in four known cases the PCR was in fact cancelled.

[10] Figure includes $90,000 expenditure for project 3P-81-0194 which was referred to as a first step to the network.

[11] Unless otherwise indicated the coordinating agency of a network was taken to correspond with the recipient of the funds.

of information, the exchange of germ plasm and the coordination and organisation of network activities and training.[12]

Two of the 15 projects involved joint funding of a network with other donors. In one case, IDRC was one in a set of four other donors which included the UNDP, UNCTAD, two national governments and another network. In the second case, the network is a collaborative project with the UNDP funding one component and IDRC the other.

Eight of the 15 projects had multiple phases.[13]

IDRC-supported activities for networks projects cover the following range. Most often cited was technical support and advisory services, followed by training, then the coordination of work, the exchange of information , the establishment of new projects and finally the verification of results.[14]

Lessons learned about networks from the 15 reports:[15]

The identification of suitable **members** and the follow up to ensue the necessary commitment is crucial to ensure network effectiveness. (IS - 84-0197-00)

A suitable **coordinating agency** to develop a network is one which has the appropriate political commitment and ability to fulfil this role. (IS - 3-P-82-0029; 84-0197-00)

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[12] Note that a reliable and telling indicator of the coordinating agency's function can not be derived from the PCRs. There is no consistency or standardisation between reports. Some examine the role of the coordinator/coordinating agency while others focus little on this. Thus the order of qualities presented here based on frequency of citation represents potential distortions as one project may cite several of these points while others do not discuss the function of the coordinating agency at all. The PCRs were not designed to extract this information thus the findings must be regarded as incomplete and viewed with this in mind.

[13] Note that the use of PCR'S as an indicator to assess the trend regarding support of multiple phase projects is under-represented due to the tendency to cancel or withhold the completion of a PCR until all phases of a project are completed.

[14] The same restrictions apply here as in note 4.

[15] The sample size of PCR's coupled with the varying degrees of attention and discussion given to the network in the reports did not make it possible to extract from this a series of lessons applicable to networks in general. Rather what is provided is a list of specific lessons learned from various projects.

Changes in **political climate, administration or organisation** within an institution can impact on the network yet IDRC has little control over such situations.(IS - 84-0197-00)

The **loss of key people** in senior positions plus the absence of an advisory committee or inadequate involvement of professionals in a project can result in its downfall. (IS -3-P-82-0029)

The **coordinator** appears to have a crucial role in the success of a network. The linkages and technical support provided by this role strengthens a network. The network advisor plays a crucial role in reducing the sense of isolation among researchers and brings psychological support. (AFNS -80-9132; 3-P-84-0306; 3-P-85-0007; 3-P-80-0185.)
IDRC needs to ensure that the personnel capacity is nationally provided to satisfy the human resource needs of a network. (IS-39-0029)

Use of a network is warranted where a common theme among projects necessitates their coordination. However, the mere presence of a number of IDRC projects on a sectoral topic in a regions does not require an expensive umbrella format to coordinate them. The umbrella network model is not the most appropriate mechanism for providing technical support and co-operation in regions of low research capacity. This is achieved better by specific network support. (AFNS- 3-P-80-0185)

Prior to supporting a network related project, IDRC should ensure that the project is a priority for the recipient and not just one concern among other more important components of a larger project. (IS-3-P-84-0073)

5

ANALYSIS OF THE OPEIS DATABASE

Networks

1. INTRODUCTION

This study presents the brief results of a review of the Centre's experience with networks based on evaluation reports which have been included in the OPEIS database.

Through the OPEIS data base, text from evaluation reports is accessible as answers to 49 questions in key areas of concern to IDRC. The OPEIS software system allows the searching, tabulating and grouping of the answers according to the user's interests.
To date only 56 evaluation reports are included in the database with another 30 to be added by the end of July. Further information on OPEIS is explained elsewhere in a separate binder.

2. RELEVANT OPEIS QUESTION

The OPEIS database was approached asking the question "what has IDRC's experience been with networks?"

One method of using the database would be to identify all network reports on the system and then select the appropriate questions for analysis. However, this approach is not that viable as to date **only three network** evaluations are in the database.

The second option, pursued here, is to identify the OPEIS question relating to networks. While the network mechanism is not directly addressed, information on "networks and networking" is provided by question 4.05, **"Were the international cooperation and coordination (networking) objectives met?"**

3. ANALYSIS OF THE RESPONSES

This question received a total of 37 responses: yes=26, no=8 and yes/no=3. In 70% of the cases it was felt that networking objectives were met.

The text responses, through frequency of citation, begin to identify and pull out specific components which are important to networking. While further work is needed in this area to determine the differing values placed on these components, the OPEIS responses begin this process of inquiry.

The yes and yes/no responses most frequently cite an effective coordinator that is one who "genuinely coordinates" as important in fostering external linkages. Regional seminars, conferences and workshops, publications and directories then receive frequent mention as important contributions to effective networking.

The creation of formal and informal relationships are cited by frequent reference to: "extensive international linkages"; "conferences and workshops as important means of communication"; "large number of personal contacts" and "the feeling of being part of an international community working on common problems".

Collaboration between institutions with similar research interests and mandates is cited in the text by reference to: "cohesion and a method of communication among scientists in the region"; " a regional seminar to consider what part of this technology can be developed in their countries"; "incorporated almost all institutes and agencies dealing with forestry research into the project throughout the five countries"; "results used by other agencies; "Caribbean academic institutions can collaborate in an extremely beneficial way"; and "major contribution to the coordination of research throughout Africa".

4. NETWORK REPORTS

Only three evaluation reports on networks are included in the initial database so one can draw few findings or conclusions about IDRC networks in general from the database. However, over the next two years a large number of divisional evaluations will be addressing support to networks. As these reports are entered, the database will become a resource with increased potential.

The networks included are:

Technonet Asia covering two Information Science projects: Technonet phase II (3-P-76-0082) and phase III (3-P-79-0151)

INFOPLAN covering six IS projects: CARISPLAN phase I, (3-P-78-0098) and phase II, (3-P-80-0155); Caribbean Information Network (3-P-78-0162); INFOPLAN phase II (3-P-80-0154)

CATIE covering 2 AFNS projects: Animal Production System phase I (3-P-75-0090) and phase II (3-P- 79-0047)

The primary lesson learned from the text is that the coordinating function of a network while crucial is difficult to successfully carry out:

Technonet.: "Less than satisfactory marks have been given to Technonet's role and effectiveness as a focal point of the network."; and
Infoplan: "CLADES has failed to understand that in any networking scheme, the lead organization is only "first among equals". "No mechanism was created which would ensure consultation with feedback from participating networks."

For CATIE the text demonstrates its effective role as a strong regional player linking various national institutions: "Various arrangements with national institutions gave CATIE a regional presence, with high-level professionals residing in six Central American countries and a network of training courses and programs promoting the development of livestock research in host countries".

Évaluation

CANADA

Abrégé

Bureau de la planification et de l'évaluation

RÉSEAU DES SYSTEMES DE PRODUCTION ANIMALE EN AMÉRIQUE LATINE (RISPAL) (JUIN 1988) **EA n° 7**

LES PROJETS : Le CRDI finance des projets de recherche sur les systèmes de production animale (RSPA) en Amérique latine depuis 1977. Ces projets sont liés par un réseau appelé "Red de proyectos de Investigacion en Sistemas de Produccion Animal de Latinoamerica" (RISPAL). La recherche s'intéresse aux petits et moyens producteurs et porte sur l'élaboration d'une méthodologie à appliquer à la recherche sur les systèmes, l'échange d'information et l'utilisation des compétences régionales et la formation. RISPAL a été officiellement établi en 1986 bien que le réseau ait commencé ses activités en 1981. Les 12 projets en cours forment le gros de la recherche en sciences animales financée par le CRDI en Amérique latine. Ces projets sont novateurs et à risque élevé parce que la recherche est complexe, à long terme et presque sans précédent ailleurs au monde.

L'ÉVALUATION : L'évaluation a été faite par les SAAN pour analyser les progrès accomplis dans les méthodes et le plan de la recherche, tout comme les résultats donnés par l'approche, ce qu'elle a permis de réaliser et ses limites, sans compter les bénéficiaires et les applications possibles des résultats. L'évaluation a été exécutée par une équipe internationale de deux experts-conseils du secteur privé et d'un professeur de sciences animales.

PRINCIPALES CONSTATATIONS : RISPAL a contribué à changer la philosophie traditionnelle de la recherche en fonction des disciplines en une philosophie qui met l'accent sur les problèmes au niveau des exploitations agricoles. Les projets membres du réseau jouent un rôle qui dépasse de beaucoup leur taille et leur portée. L'approche a suscité l'intérêt du gouvernement et l'appui des paysans. Dans plusieurs pays, il forme le centre des activités de recherche nationale sur le bétail. Ainsi, à Panama, le programme de recherche en sciences animales de IDIAP (Institut de recherche agricole de Panama) a été organisé suivant l'approche systémique. Les principales activités de ce programme sont liées au projet financé par le CRDI sur les systèmes de production des vaches laitières.

Les projets ont joué un rôle de catalyseur entre la formation en recherche et les organisations de développement. Par exemple, au Guatemala l'Institut des sciences et de la technologie agricoles, le département du bétail du Ministère de l'agriculture, l'Université San Carlos et l'Institut interaméricain de coopération en agriculture, forts en recherche, formation et services de vulgarisation sont désormais liés les uns aux autres. Il est donc ainsi possible de tirer parti des avantages comparés de toute une gamme d'organisations.

RECOMMANDATIONS : Il a été difficile d'appliquer la nouvelle philosophie à grande échelle. Les raisons en sont diverses et très souvent attribuables à la fragilité de l'organisation. L'évaluation contient plusieurs recommandations pour améliorer la planification et la gestion tant des projets que du réseau. D'un intérêt particulier pour le CRDI sont les recommandations que dans les futurs projets :

i) il soit prévu des fonds suffisants pour combler le fossé entre la recherche et la vulgarisation à l'étape de la valorisation en ferme même si cela signifie fournir des fonds à un organisme qui ne fait pas de recherche, soit un organisme de vulgarisation;

ii) le CRDI use de son prestige et de ses ressources pour aider les gouvernements nationaux à obtenir l'aide financière internationale nécessaire, soit crédits et services de vulgarisation.

BPE/15:5:89

Evaluation

CANADA

Abstract

Office of Planning and Evaluation

THE LATIN AMERICAN ANIMAL PRODUCTION SYSTEMS NETWORK (RISPAL). (JUNE 1988) ***EA #7***

THE PROJECTS: IDRC has supported projects in animal production systems research (APSR) in Latin America since 1977. They are linked by a network called "Red de proyectos de Investigacion en Sistemas de Produccion Animal de Latinoamerica" (RISPAL). The research is directed towards small and medium scale farmers focussing on methodology development in systems research, exchange of information, and use of regional expertise and training. RISPAL was formally established in 1986 although network activity began in 1981. The 12 current projects form the largest component of IDRC support for animal science research in Latin America. They are innovative and high risk because the research is complex, long term, and there is little world-wide experience in it.

THE EVALUATION: was undertaken by AFNS to analyze progress in methods and design; results, achievements and limitations of the approach; and beneficiaries and potential applications of the results. An international team of two private consultants and one professor of animal sciences carried out the study.

MAIN FINDINGS: RISPAL has been instrumental in changing the traditional discipline-oriented research philosophy to one which emphasises problems at the farm systems level. Member projects play a role far beyond their actual size and scope. The approach has generated government interest and farmer support. In several countries, it forms a focus of national research activities for livestock. For example in Panama, the Animal Sciences research program of IDIAP (Agricultural Research Institute of Panama) has organised its activities following the systems approach. Their main activities are linked to the IDRC supported project in dairy-beef production systems.

The projects have played a catalytic role to link research training and development institutions. An example is in Guatemala where the Institute of Agricultural Sciences and Technology, the Livestock Department of the Ministry of Agriculture, San Carlos University, and the Interamerican Institute for Cooperation in Agriculture which are strong in research, training and extension services are now linked. This makes it possible to capitalize on comparative advantages of a range of institutions.

RECOMMENDATIONS: The new philosophy has been difficult to implement on a wide scale. The reasons are various and largely related to institutional fragility. The study makes several recommendations to improve this situation in both project and network planning and management. Of particular interest to IDRC are recommendations that future projects:

i) make adequate financial provision for bridging the research-extension gap at the on-farm validation stage even though it may involve providing funds to a non-research (i.e. extension) agency;

ii) IDRC use its prestige and resources to help national governments obtain the required international financial support in terms of credit and extension services.

IDRC
CRDI

Evaluation

Abstract

Office of Planning and Evaluation

EA #13

EVALUATION OF URBAN HYDROGEOLOGY PROJECTS (ARGENTINA, BOLIVIA, BRAZIL, MEXICO, URUGUAY, BENIN, MALI, SENEGAL, THAILAND)

THE PROJECTS : Nine research projects and one networking project (6 in Latin America, 3 in Africa and 1 in Thailand) co-funded by IDRC and involving Canadian universities and recipient country institutions, taking place between 1985 and 1989. The projects are part of the Centre's 'Water in the Environment' subprogram and involve applied research on critical urban hydrogeology problems such as water supply, contamination and land subsidence.

THE EVALUATION : Conducted by Klohn Leonoff, Consulting Engineers between December 1989 and March, 1990. The intention was to evaluate the philosophy, conception, planning, methodology and results of the projects. Interviews were limited to Canadian partners and Latin American participants.

THE MAIN FINDINGS :

a) The projects provided significant opportunities for transfer of methodologies and technologies as well as injecting new hydrogeological thinking on critical water supply, contamination and land subsidence problems. Approaches taken in the projects were generally seen to be appropriate although the scope and objectives were described as too ambitious in certain cases.

b) Research results have "varied widely" depending on a number of factors. Some projects have published extensively, while others have not at all, limiting opportunities for assessing scientific merit. 'Operating institutions' are described as less committed to publishing results than universities.

c) The evaluation notes that a winning formula of research collaboration "has not clearly emerged". Determining factors include the quality of relationships between Canadian and overseas partners, the limited involvement of intermediate level staff in recipient institutions, the nature of graduate student involvement (problematic in some cases) and limited accessibility to appropriate specialists.

d) Success in institutional strengthening has depended on the initial conditions of the institution involved, the nature of the institution (academic or 'operating'), the quality of the organization's leadership, staff training opportunities, and availability of funding. Those organizations with greater capacity, especially in groundwater science and practice, were seen to have benefitted most from the projects, e.g. Mexico, Brazil.

e) Overall, the potential for positive developmental impact through these projects is seen as "very significant". Besides the direct effect on water supply, the projects provide opportunities for increased awareness of water and sanitation issues potentially leading to broader national initiatives and policy advances, as well as strengthening of the scientific base among participating countries. The report expressed the desirability of increased sharing and coordination among the various IDRC projects.

OPE/30:10:90

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AÉ N° 13

ÉVALUATION DES PROJETS D'HYDROGÉOLOGIE URBAINE (Argentine, Bolivie, Brésil, Mexique, Uruguay, Bénin, Mali, Sénégal, Thaïlande)

LES PROJETS : Neuf projets de recherche et un projet de réseau (6 en Amérique latine, 3 en Afrique et 1 en Thaïlande) co-financés par le CRDI et auxquels participaient des universités canadiennes et des institutions des pays visés, et qui se sont déroulés entre 1985 et 1989. Les projets relevaient du sous-programme «L'eau dans l'environnement»; leurs recherches portaient sur de graves problèmes d'hydrogéologie urbaine comme l'approvisionnement en eau, la contamination et la subsidence des sols.

L'ÉVALUATION : réalisée par Kohlm Leonoff, Consulting Engineers, entre décembre 1989 et mars 1990. Il s'agissait d'évaluer les principes, la conception, la planification, la méthodologie et les résultats des projets. Les entrevues se sont limitées aux partenaires canadiens et aux participants d'Amérique latine.

LES PRINCIPALES CONCLUSIONS :

a) Les projets ont ouvert d'importantes possibilités de transfert de méthodologies et de technologies, en plus de susciter une nouvelle réflexion sur les graves problèmes hydrogéologiques que sont l'approvisionnement en eau, la contamination et la subsidence des sols. Les approches des projets étaient généralement appropriées, mais leur portée et leurs objectifs étaient parfois trop ambitieux.

b) Les résultats des recherches ont «varié grandement» selon divers facteurs. Certains projets ont publié sur une grande échelle, d'autres pas du tout, ce qui a entravé l'évaluation du mérite scientifique. Les «institutions opérationnelles» étaient moins déterminées à publier les résultats que les universités.

c) Aucune recette-succès de collaboration sur le plan de la recherche n'émerge clairement. Les facteurs déterminants comprennent la qualité des interrelations entre les partenaires du Canada et de l'étranger, la participation limitée du personnel de niveau intermédiaire des institutions bénéficiaires, la nature de la participation des étudiants diplômés (qui a parfois posé des problèmes) et l'accessibilité limité de spécialistes compétents.

d) Le succès sur le plan du renforcement institutionnel dépendait de la situation initiale de l'institution, de sa nature (établissement d'enseignement ou institution «opérationnelle»), de la qualité du leadership de l'organisation, des possibilités de formation pour le personnel et du financement disponible. Les organisations ayant des capacités supérieures, notamment en matière de théorie et de pratique dans le domaine des eaux souterraines, semblent avoir le plus profité des projets, par ex. au Mexique et au Brésil.

e) Dans l'ensemble, les retombées positives de ces projets sur le développement semblent «très importantes». Outre leurs effets directs sur les approvisionnements en eau, les projets ont permis de sensibiliser davantage les décideurs aux problèmes de l'eau et de l'assainissement, ce qui se traduira peut-être par des initiatives nationales de plus grande envergure et des progrès sur les plans des politiques, tout en renforçant la base scientifique dans les pays participants. L'évaluateur souhaiterait voir davantage d'échanges et de coordination entre les divers projets du CRDI.

BPE/30:10:90

Evaluation

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Abstract

Office of Planning and Evaluation

EA #17

A REPORT ON THE REVIEW OF THE NETWORK FOR AQUACULTURE GENETICS (NAGA) IN ASIA

THE PROJECTS : NAGA[1] is a an association of bilateral projects supported by IDRC and the Biology Department, Dalhousie University. The overall goal of the projects is "to develop the capability of producing high-yielding, disease-resistant, profitable strains of fish". In addition to research activities, IDRC supports short and long term training fellowships.

THE AFNS EVALUATION : Two researchers, experienced in genetic research and research development programs, visited projects in Thailand, China, the Philippines, Indonesia and Canada to evaluate the appropriateness of research objectives, assess technical output, examine current and proposed networks and make recommendations on staff development and possible linkages.

THE MAIN FINDINGS :

a) The projects are described as "extremely effective" in developing local talent. However, the researchers note the need for greater emphasis on practical 'selection schemes' for farmers, more equal distribution of benefits across the network and reliance on a broader range of expertise.

b) Other specific concerns include the following: deficiencies in local staff in project design and quantitative methods; individuals being drawn away from research to fish production, with attendant consequences for the quality of research results; inadequate supervision of projects; and, minimal circulation of reports or publication of scientific papers.

c) The 'network' idea is seen more as a creature of IDRC than Dalhousie. If it is to function properly, it is proposed that a new administrative structure be implemented to coordinate activities, ensure proper management of resources, equitable distribution of opportunities, exchange of information (e.g. network meetings, newsletters) and cooperation in research undertakings. Details for a new structure are put forth.

d) The evaluators recommend that all projects (except SEAFDEC[2] Tigbauan - the Philippines) continue to receive support at least equal to current levels. Continued support for the China project should be contingent upon reorganization and additional staff. Expanding the network to other countries and regions should be considered and that the major emphasis should remain quantitative genetics and development of breeding programs.

e) Specific recommendations for IDRC include the following : broader consultancy support (i.e. beyond currently available Dalhousie staff) be provided; greater attention be given to weaker projects (e.g. Indonesia, China); additional training be provided in areas such as genetics research and statistical analysis; connections be made with other IDRC sponsored aquaculture networks, and; a full time coordinator be appointed based in Asia.

OPE/30:4:91

[1] Network of Aquaculture Genetics in Asia

[2] Southeast Asian Fisheries Development Center

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AÉ N° 17

RAPPORT DE L'ÉVALUATION DU RÉSEAU ASIATIQUE DE GÉNÉTIQUE AQUICOLE (NAGA)

LES PROJETS : Le Réseau asiatique de génétique aquicole (NAGA) regroupe des projets bilatéraux financés par le CRDI et le Département de biologie de l'Université Dalhousie. Ces projets ont pour objectif général "d'accroître la capacité de production de lignées de poissons à rendement élevé, qui résistent aux maladies et sont rentables". Outre le financement d'activités de recherche, le CRDI octroie des bourses en vue d'une formation à court ou à long terme.

L'ÉVALUATION DES SAAN : Deux chercheurs connaissant la recherche en génétique et les programmes de recherche et de développement ont visité des projets menés en Thaïlande, en Chine, dans les Philippines, en Indonésie et au Canada, pour évaluer la pertinence des objectifs de recherche et les résultats techniques obtenus, pour examiner les réseaux actuels et ceux dont la création est proposée, et pour faire des recommandations sur le perfectionnement des ressources humaines et les possibilités de liaison.

LES PRINCIPALES CONCLUSIONS :

a) On estime que ces projets sont «très efficaces» pour mettre en valeur les talents locaux. Les chercheurs ont remarqué, toutefois, qu'il faudrait mettre l'accent davantage sur les «systèmes de sélection» pratiques pour les agriculteurs, sur une répartition plus équitable des avantages dans l'ensemble du réseau et sur le recours à un plus vaste éventail de compétences.

b) Parmi les autres préoccupations, mentionnons celles-ci : lacunes au niveau du personnel local en ce qui concerne l'élaboration des projets et les méthodes quantitatives; les personnes qui font de la recherche sont attirées vers la production, ce qui a des conséquences néfastes sur la qualité des résultats de la recherche; les projets ne sont pas supervisés de façon adéquate; les rapports ne sont guère diffusés et peu d'articles scientifiques sont publiés.

c) L'idée d'un «réseau» semble venir davantage du CRDI que de l'Université Dalhousie. Pour en assurer le bon fonctionnement, on propose la mise en place d'une nouvelle structure administrative pour coordonner les activités et pour veiller à la gestion adéquate des ressources, à une répartition équitable des possibilités, à l'échange de l'information (p. ex., réunions du réseau, bulletins) et à la coopération en matière d'activités de recherche. On est en train de définir plus précisément cette nouvelle structure.

d) Les évaluateurs recommandent que tous les projets (sauf celui du SEAFDEC[1] à la station de Tigbauan, dans les Philippines) continuent de recevoir des fonds au moins équivalents à ceux qu'ils reçoivent actuellement. Le maintien de l'appui au projet chinois devrait dépendre de la réorganisation et de l'apport de personnel supplémentaire. Il faudrait envisager d'étendre le réseau à d'autres pays et régions, et celui-ci devrait continuer de se concentrer sur la génétique quantitative et la mise sur pied de programmes de sélection.

e) Quelques-unes des recommandations visant le CRDI : plus grand soutien d'experts-conseils (c.-à-d. d'autres personnes que le personnel actuellement disponible à l'Université Dalhousie); plus d'attention aux projets plus faibles (p. ex., en Indonésie et en Chine); formation supplémentaire dans certains domaines, comme la recherche en génétique et l'analyse statistique; liens avec les autres réseaux parrainés par le CRDI en aquiculture et nomination d'un coordinateur à plein temps qui travaillera en Asie.

BPÉ/30.4.91

[1] Southeast Asian Fisheries Development Centre

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10. IDRC Network Projects List

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7

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- Number of titles: 11

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This section outlines the contents and coverage of the principal sources.

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1. Assessing the Network Mechanism in IDRC

Akhtar, S. **Regional Information Networks: Some Lessons from Latin America. Information Sciences Division. pp. 1-23.**

The fourth in a series of articles on the activities of the Information Sciences Division of IDRC, examines the role of information networks in transferring, disseminating and sharing information. The author presents the theory and practice of information networking based on ISD's experience with the development and management of Latin American information networks over the past two decades. The main objective of networking are the promotion of resource-sharing,plus the pooling and transfer of resources. Successful resource sharing is not only dependent upon appropriate goals and objectives as the structure, membership, and governance of a network is also of great importance. A number of characteristics are suggested that any network should reflect in its structures and operations.

Banta G. **The Use of Networks to strengthen the Crops and Cropping Systems Group Activity: A Discussion Paper. AFNS. Mimeo. 1982. pp 1-11**

Prepared by the AFNS division at IDRC, this discussion paper is concerned with how networks could be used to help the Crops and Cropping Systems Group meet their goal of increasing farm family wellbeing through increased crop production. The immediate objectives of increasing the amount, relevance and efficiency of agricultural research on crops and cropping systems are difficult to satisfy given available CCSG resources. Project objectives are not being met on account of insufficient support and guidance by programme officers. It appears that this problem will increase in the future. The author discusses agricultural research networks in the CCSG by citing, discipline, commodity or methodology as possible bases on which to establish a network. The development of an agricultural research network is outlined and some of its operational difficulties examined. IDRC's commitment in terms of funds and time, the composition and role of an advisory committee and the role of the network coordinator are discussed. The author regards the network coordinators role as a central one which should support the national programmes in establishing effective operational procedures and facilitating communication and links with other national programmes and agencies.

Daniels, D. and Kishk F. Improving Productivity Through Research Collaboration. 1982. pp. 1-15.

Presented at the Seminar on Planning and Management of Joint Research Projects, sponsored by the Arab League in Carthage, Tunis, 1982, this paper adopts the stance that the research resources of a wider community of scientists than can be found in any one institution or national program must be harnessed and efficiently coordinated if progress is to be made in developing countries. The activities and experience of IDRC in supporting collaborative research programs and networks is outlined, relying on the findings of the 1980 policy study conducted by Nestel, Hanchanlash and Tono. A number of reasons for IDRC support of collaborative research are identified, network research programs defined, coordinating research networks discussed and common research linking mechanisms cited. The food legumes network of projects in the Near East and North Africa is examined as one example of an IDRC supported network.

Faris D.G. "Agricultural Research Networks: Their Structure and Function" in Eastern and Southern Africa Network Coordinators' Review. IDRC Manuscript 204e, D.G. Faris and A.D. R. Ker eds. Oct. 1988. pp. 7-18.

As part of the proceedings of the Eastern and Southern Africa Network Coordinators' Review workshop held at Nairobi, Kenya, 9-12 May 1988, Faris argues that Collaborative Agricultural Research Networks (CARNETS) are a mechanism capable of solving agricultural problems which require the cooperation of different institutes, governments, donors and research disciplines. The author presents the Special Program for African Agricultural Research (SPAAR) Network Group model as an illustration of network requirements. The structure and function of this model is elaborated under the headings of network start up, coordination, network components and network operations. SPAAR's typology for agricultural research networks for SSA is given in addition to CARNET criteria as pre-conditions for donor support. The author argues that networks are an appropriate mechanism for strengthening national research systems which are central to the SPAAR model. Networks assist in determining their research priorities and allow information and material to be effectively shared between NARS scientists. An appendix sets out guidelines for a discussion on agricultural networks which covers: objectives, advantages and limitations; models and their effectiveness; network and research coordination; network activities; national programmes; and the funding and measurement of network progress.

Glover D., S. Shaeffer, H. Krugmann,P. Vitta. Report on Networks July 1987. pp. 1-8.

From the Social Sciences division, at IDRC, this report endorses the Centre's practice of adopting diverse approaches to networks. Centre-administered networks in poor environments form the core of the Division's strategy for Africa and function as an efficient, flexible and cost effective mechanism. Basic Social Science data is provided indicating the percentage of program funds allocated to networks over the 1982-87 period and provides the names of both ongoing and forthcoming networks. Additional information on structure and activities is provided for three networks in East Africa. The

authors list eight possible dimensions useful in designing a typology of networks. Purposes, advantages and problems of networks as experienced by Social Sciences are listed with suggested possible solutions.

Kirkby, R.A. 1988 "Implementing Agricultural Research Networks: Some Principles and Issues" in Eastern and Southern Africa Network Coordinators Review. D.G. Faris and A.D.R. Ker eds. IDRC Manuscript Report 204e. 1988. pp. 20-23.

From the proceedings of a workshop of the Eastern and Southern Africa Network Coordinators' Review, held at Nairobi, Kenya, 9-12 May 1988, the author makes the point that, agricultural research networks as they presently exist may not serve the interest of strengthening national research systems. An inherent contraction exists in which networks on one hand attempt to provide linkage mechanisms that enable a group of countries, institutions or researchers to achieve more through collaboration than could be achieved individually. On the other hand, most networks have their origins or driving force in an institution (ex. IARC or donor organization) which directs the course of the network guided by its own interests. The article addresses the way in which networks impact on NARS in term of increased demands on the time of personnel, overburdening the national research capacity, the tendency for larger NARS to receive greater benefits than smaller more needy NARS, decision-making in networks, cooperation among networks, and the sustainability of networks. The article concludes by addressing the future role of IARC's in networks. The author argues that IARC's need to choose between maintaining a long term coordinator role and changing to a liaison role within indigenous networks. The future role of IARC's, Kirkby suggests, will be greatly influenced by the issue of sustainability.

Nestel, B. Hanchanlash, J. Tono, H. IDRC Project Networks: An Appraisal of Past Strategy and Recommendations for the Future. Office of Planning and Evaluation, IDRC Ottawa,August 1980.

Prepared for the Vice-President, Planning at IDRC, this paper conducts an extensive appraisal of the centres' past strategy and presents recommendations for the future. The extent to which IDRC has used a network approach, the diversity of approaches developed and the termination of networks are examined. In addition the value of the network approach plus the advantages and disadvantages of different methods of building networks are assessed.

Findings reveal that in the first nine years of IDRC's operations 35 percent of its projects and 43 percent of its program budget related to networks. No IDRC network model was found to exist rather there is a flexible package of networks reflecting the individuality in character of each. Networks are used to strengthen research institutions, to develop human resources, to produce research results and to provide information to policy makers. The importance of each role varies between networks. It does not appear that networks have any unique advantage over individual projects in achieving any one of these objectives.

The primary doubt network recipients expressed was to question the effort which IDRC puts into the planning, organising and management of a structure not designed to be long term or permanent. The main disadvantage of the different methods used by IDRC to build up networks is the absence of an in-house mechanism to draw on and share the lessons of experience derived from the great diversity in approach to networks. Experience are shared to a limited degree on an intra-divisional basis and little sharing exists between divisions. Networks appear to give greater emphasis to the production of knowledge than to its dissemination and utilization, an area which itself needs research into effective mechanisms.

The authors conclude by drawing a series of recommendations, which cover aspects of management, network goals, budget allotments, inter-divisional exchange, the role of Canadian institutions and scientists, the time frame and termination of network projects and the mechanisms for financing. General recommendations include an endorsement to continue the use of networks in IDRC's project portfolio's. The current flexibility in approach is advocated and the need for a specific budget allocation to networks is dismissed. It is suggested that IDRC should consider adopting a regional approach with respect to network goals and management. In order to develop an interdivisional approach in the network program IDRC should establish mechanisms for encouraging and coordinating interdivisional multidisciplinary networks. It is recommended that IDRC devotes a larger part of its budget to high risk network projects in selected LDC institutions and that in these LDC's greater emphasis should be placed on institutional development and the strengthening of local capabilities. With the exception of LDC's, IDRC should continue its policy of allowing a wide range of network goals, be it, institution building, human resource development or the production of research results and dissemination of information to development planners. IDRC should adapt a more open system of management, which discusses project errors and failures and uses these to develop better programs on an organizational, as opposed to a divisional basis.

Omari, Issa. "Opening Remarks" in Eastern and Southern Africa Network Coordinators' Review. IDRC Manuscript Report 204e, Oct. 1988. pp. 2-4.

These remarks are from the proceedings of a workshop held at Nairobi, Kenya, 9-12 May 1988. The author suggests six principles useful when reviewing networks: (1) Effectiveness of research in terms of quality, potential for practical use and actual utility, (2) Sustainable growth of knowledge, quality of life and incomes, (3) Equity in access to national and global resources, (4) Participation of people from developing countries, (5) Responsiveness to needs of scientists, people in general and rural communities in particular,(6) Innovativeness and flexibility in experimenting with different approaches to solving problems in the context of changing circumstances and the state of knowledge. A set of corresponding questions accompanies each principle.

Woolston, John E. Regional Integration of Information Activities: A Donor's Viewpoint. pp. 1-16, May 1984.

Presented at the Reunion Interamericana de Bibliotecarios y Documentalistas Agricolas, Brasilia, 6-11 May 1984, the author argues that within the information field, networks are

more attractive to donors than the uncoordinated activities of separate institutions. Networks offer the following advantages: (1)avoid the duplication of work;(2) increase the dissemination of services/knowledge; (3) resolve the question concerning whether specific institutions have a mandate appropriate for their proposal; (4) ensure the establishment of mechanisms for the management of methodologies by consensus and facilitate a clearly focused training. The article concludes by providing a set of guidelines for applicants seeking donor support. They are advised to ensure that network activities have been defined, that a degree of standardization has been adopted to ensure compatibility of data, that an agreement has been reached on which activities need to be centralized and that the prospects are good for self-reliant operation when donor support ends.

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2. Assessing the Network Mechanisms in Other Agencies

Webster, B. Valverde, C. and Fletcher, A. eds."Networking As a Means of Increasing the Efficiency of Agricultural Research". Discussion and conclusions of panel 2. in The Impact of Research on National Agricultural Development. ISNAR, 1987. The Hague, Netherlands.pp. 145-7.

From the proceedings of the First International Meeting of National Agricultural Research Systems and the Second IFARD Global Convention, held in Brasilia, 6-11 October 1986, this article concludes the panel discussion on "Networking as a means of Increasing Efficiency of Agricultural Research" by Pillay, Torres, Winkelmann and Gastal, by summarizing the main findings and sentiments of these commentators. While networks were generally endorsed as appropriate mechanisms to facilitate communication and collaboration and hence increase the efficiency of agricultural research, caution was expressed to avoid regarding networks as the panacea and applicable in all circumstances. The advantages of networks in terms of human and financial efficiency gains, improved communication and exchange of information and the attainment of the critical mass required to solve a problem were cited. However, concern was expressed about regarding networks as a mechanism to replace national priority setting and /or sponsor research independently of participating countries. Thus, a clearly defined set of national research priorities and a degree of commonality of high priority problems among participating countries should be seen as a prerequisite and guideline to the shape a network takes. This article provides a prioritized list of characteristics which appear to be the main criteria for the establishment of a research network. This list draws heavily on Winkelmann's work.

Bonilla, S. E. and Cubillos, A.G. "Chile's Experience in Agricultural Research Networks" in International Workshop on Agricultural Research Management. ISNAR, 1987. The Hague, Netherlands. pp. 131-36.

From a report on the International Workshop on Agricultural Research Management, held by ISNAR at the Hague, September 7 to 11, 1987, the authors examine three collaborative and integrative efforts concerning agricultural research in Chili. These include, the National Agricultural Information System, the Cooperative Program for Potato Research (PROCIPA) and the Latin American Maize Program (LAMP). Each network is briefly described.

CGIAR REPORTS: The Consultative Group on International Agricultural Research

At the annual meeting in 1983, the CGIAR commissioned an impact study on the results of the activities of the international agricultural research organizations under its sponsorship. A series of study papers published in 1985 resulted. The papers produced examined networks on a country basis.

Country reports use the following title format:

CGIAR Study Paper No. 4: Costa Rica and the CGIAR Centres: A Study of their Collaboration in Agricultural Research

Reports are also available for:

Guatemala, Zimbabwe, Nepal, Bangladesh, Brazil, Indonesia, Ecuador, Peru, Syria, Cuba, Burma, Thailand, Philippines, Chile, India.

These country papers follow a systematic format addressing the country background, the National Agricultural Research System, the Impact of IARC on the NARS, the Research Impact on Agricultural Production and a set of conclusions. The evaluation approach used in these reports generally follows Valverde method and consequently are useful models of his approach.

Greenland, D.J., Craswell, E.T. and Dagg M. "International Networks and Their Potential Contribution to Crop and Soil Management Research". in Outlook on Agriculture. vol 16 no. 1. 1987. pp. 42-50. pp. 42-50.

This paper reviews the role of agricultural research networks in making possible the evaluation, adaptation, and extrapolation of crop and soil management studies, and so improving the efficiency of much agronomic and soil research. The paper reviews the networking phenomenon and discusses three functioning IRR networks. Seven principles of a successful network, and the role of networks in strengthening national research systems is discussed.

Iyamabo , Dominic E."Strategies for Strengthening National Agricultural Research Systems" in Webster, B. Valverde, C. Fletcher. A. eds. The Impact of Research on National Agricultural Development. ISNAR, The Hague, Netherlands, 1987. pp.155-159.

From the report on the First International Meeting of National Agricultural Research Systems and the Second IFARD Global Convent, the authors provide a list of nine criteria for an effective NARS. Iyamabo, come up with a 19 point list of current weaknesses in form and management which imped NARS in Africa. While by no means exhaustive this list provides a background against which strategies for strengthening NARS can be discussed. Such a strategy emphasizes what researchers can do to strengthen NARS. Suggestions include:(1) increasing the governments understanding of the funds and time required for research; (2) researchers should broaden the base of research funding by pursuing industry and MNC's; (3) research must reexamine/restructure research products and technologies to improve adoption by farmers and industry; (4)improve science and technology data bases to gain access to all available information; (5) researchers should find a way to supplement existing extension services; (6) researchers should increase their interaction with scientists across disciplines; (7) researchers can upgrade and maintain their work standards via such collaboration; (8) it is desirable for researchers to formalize links with advanced research institutions and University departments engaged in basic research; (9) periodic external reviews of research programs and management should be conducted providing an opportunity for opinions on the relevance, quality and usefulness of works, institutions and researchers; (10) the use of consultants by NARS should be increased; (11) communications should be improved to increase knowledge on current research activities; (12) the calibre of leadership and the level of research management needs to be improved via more appropriate personnel policies. The author concludes that, given the central role of research in agricultural production, if agriculture is to be improved in Africa special attention needs to be directed towards the continents NARS which are some of the weakest in the world.

Martinez-Nogueira, R. "Agricultural Research Networks: an Analytical framework". in ISNAR Workshop on Agricultural Research Management. ISNAR. 1987. The Hague, Netherlands. pp. 119-130.

From the proceedings of ISNAR's International Workshop on Agricultural Research Management, held at the Hague, September 7 to 11, 1987, the author contributes to the study of agricultural research networks by presenting some preliminary propositions and hypothesis as analytical tools to understanding the creation, organisation, operation, monitoring and evaluation of inter-institutional mechanisms. The author argues that networks can be seen as a mechanism for increasing scientific and technological capabilities of participant members which are in turn developed through increased complexity of their activities and progressive integration of the national systems involved. Martinez-Nogueira proposes that, there is a necessary correspondence between network objectives, activities, members' capabilities and the organisational structures they adopt. Furthermore, networks, based on a division of labour, comparative advantage and complementation, attempt to

bring about greater national, regional and international integration. Integration strategies should be incremental, non-balanced and aimed at achieving a progressive increase in scientific and technological capabilities. In addition, organizational arrangements should be responsive and adaptive to the type of activity and capability of network members as capabilities progress. In a comprehensive manner the article lays out the purposes of a network, both explicit and latent; examines different activity levels of a network and relates these to different levels of network complexity.

Variations in network designs and levels of integration are explored as a reflection of the scientific and technological capability of participating national systems in the network. The author identifies a "growth path" or progressive set of activities, useful as an analytical tool for assessing and monitoring increases in the capabilities of NARS. Focusing on conditions for integration the author discusses conditions for network success and conditions of operation.

Pillay, T.V.R. "Networking as a Means of Organizing National and Regional Aquaculture Research". in The Impact of Research on National Agricultural Development Webster, B. Valverde, C. Fletcher, A. eds. ISNAR. The Hague, Netherlands. 1987. pp. 97-104.

From the Report on the First International Meeting On National Agricultural Research Systems and the Second IFARD Global Convention, the author distinguishes between the status of research in agriculture and aquaculture and comments on the state of the latter, citing its newness, the inequality of research distribution throughout the world and the confinement of research primarily to university laboratories and small research stations. The article examines the experience of an international network of aquaculture centres, divided into regional components, which has been organized, guided and coordinated by the UNDP/FAO Aquaculture,Development and Coordination Program. The intent was to assist the participation of institutions in multidisciplinary investigations and experiments on fish farming or aquaculture systems of regional importance. This network has contributed to the establishment of a number of well equipped centres, improvement in research and training and the ability to be more responsive to field problems. Consequently, institutions have been able to attract greater amounts of bilateral aid. However, since 1980, financial problems have plagued all participating countries and for some involvement in the network was a further strain on national resources. Experience points to the importance of external support for the success of this network. The author concludes by discussing the merits of establishing networks designed to bring about a loose form of institutional or individual cooperation as opposed to the discussed network which is based on shared responsibilities in a coordinated problem. This suggested approach would facilitate closer communication and cooperation yet could potentially be viable without much external assistance. This contrasts to the FAO/UNDP network whose continuation depends on alternative sources of support and the creation of a permanent mechanism for funding and administration.

Plucknett, Donald L. and Smith Nigel J.H. "Networking in International Agricultural Research". Science. September 7, 1984. pp. 989-993.

Networking in agricultural research is not a new phenomenon however the current extent of collaboration is unprecedented. Researchers are forging working partnerships on a regional or global scale to reduce cost, avoid duplication, increase efficiency and accelerate the transfer of technology to farmers. The networks discussed in this article are all concerned with international research, involve a two-way flow of information and material and entail a commitment of resources from participants. Examples are drawn from the IIRI and CIMMYT. Networks have been established to test crop germplasm over a broad range of environments, explore ways of boosting the efficiency of fertilizer use, upgrade disease resistance in livestock, and identify socioeconomic obstacles to improved agricultural output. The benefits of networking are especially valuable to countries with limited funds and scientific human resources.

Torres, F. "Agroforestry Research Networks in Tropical Africa: An Ecozone Approach". in The Impact of Research on National Agricultural Development. Webster, B, Valverde, C. Fletcher, A eds. ISNAR. The Hague, Netherlands, 1987. pp. 105-23.

From the report on the First International Meeting of National Agricultural Research Systems and the Second IFARD Global Convent, the article advocates the use of an ecozone network on collaborative research in agroforestry in Africa. The author argues that institutional complementarity, appears to be a suitable strategy for NARS to carry out agroforestry research. Institutional complementarity should guide activities among national and international institutions and also among funding agents in their assistance to NARS. Torres provides an analysis of the African environment (resource base, production systems and research systems), as an explanation of agroforestry, plus a conceptual and practical analysis of the proposed networking approach. The planning phase for establishing an ecozone network on collaborative research in agroforestry for the unimodal plateau zone of Southern Africa is presented examining the ecozone, methodology adopted, plus a discussion of results.

Winkelmann, Donald L. "Networking: Some Impressions from CHAMADE". The Impact of Research on National Agricultural Development. in Webster, B., Valverde, C. and Fletcher, A. eds. ISNAR, The Hague, Netherlands, 1987. pp. 125-134.

From the report on the First International Meeting of National Agricultural Research Systems and the Second IFARD Global Convent, Winkelmann's paper was one of four which addressed the issue of networking as a means of increasing efficiency in agricultural research. The author suggests that behind the current interest in and proliferation of agricultural research networks is the belief that networks can bring about substantially

greater output from research systems and that the commonality of problems will surface over particular self-interest. While in support of networks the article expresses a need to be cautious when examining what networks as a mechanism can deliver. The author draws on a three type classification of networks, based on degrees of integration as employed by USAID and SPARR. Each level differs in terms of degrees of resource commitment and obligation and correspondingly reliance on the network and the level of complexity which characterizes it. Based on a review of six recent articles, by knowledgeable commentators on agricultural research, the author comes up with a list of elements which lead to a successful network. Commonly cited are: a clearly defined problem or goal, strong self-interest in an important problem, strong and effective leadership, resource commitments on the part of participants, access to outside funding, and an effective advisory group. From this list, a caution is given on two points. The author suggests that the leadership and the coordinating function should be executed through an apparatus which stresses advisory groups as opposed to reliance on single individuals. Second, the author enters the debate on the role of IARC's in networks and the development of NARS capacity. The author argues that participants in a network need some form of self-determination to assure that the network style and methods are in keeping with capacities of national programs and provides some assurance that the network's concerns will correspond with the high priority problems faced by national programs. As a case study Winkelmann, discusses CIMMYT's experience with networks. The author concludes by stating that we can not expect too much from networks as after all they are a mechanism. As a means, networks need to be judged.

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RESEARCH NOTES

The following notes were put together in order to compile references to key areas of concern found in the principal works of the networks bibliography.

Fourteen sources were consulted and information on the following list of points collected. As these notes are designed to be a set, an effort was made to avoid the repetition of frequently cited comments. Consequently, mention of a particular point is referred to the original author of the idea or to the article(s) which explore a topic in the most comprehensive manner.

1. **DEFINITION** of a network
2. **TYPOLOGY** - classification of networks
3. **FUNCTIONS**/Purpose of a network
4. **CHARACTERISTICS** of a successful network
5. **ADVANTAGES/DISADVANTAGES** - the costs and benefits of a network
6. **IARCs** - role of
7. **NARS** - impact of network on
8. **FUNDING** - termination of network funding
9. **REGIONAL** differences in network experience
10. **OTHER**

The notes are arranged alphabetically by author and references cited in an article are indicated by a keyword and number.

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"Discussion and Conclusions of Panel II: Networking as a Means of Increasing the Efficiency of Agricultural Research". in The Impact of Research on National Agricultural Development B. Webster. G. Valverde and Fletcher Alan, eds. ISNAR, The Hague, Netherlands, 1987. p. 145-7.

6. IARC:

"Inherent assumption in most network thinking is that the IARC, or at least a strong regional centre, must be involved if success is to be assured. However,many networks, especially those of the European system and the global aquaculture networks, do not have such an involvement and yet appear to be effective..." p. 147

7. NARS:

Participants expressed concern "about considering networks as mechanisms that could replace national priority setting and/or sponsor research independently of participating country priorities." p. 145

Clearly defined national priorities should be a prerequisite to network formation."Networks should focus on common problems rather than be seen as a mechanism to foster or fund country-specific research."p. 145

9. REGIONAL

Networks are not a panacea to solve all problems or a simple recipe to be applied in all circumstances

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Akhtar, S. "Regional Information Networks Some Lessons from Latin America", Information Sciences Division, IDRC.

1. DEFINITION:

"Information networks constitute a group of individuals or organizations that share common interests and exchange information in various forms on a regular or organized basis". (p.2)

History of the term "network". (p. 7-8)

"A network consists of independently administered units which have formed operational links whether for the purpose of maximizing resources or improving the efficiency of their internal procedures. And of course,all networks are inter-related since they engage in the same overall function... (p. 9)

2. TYPOLOGY:

Classified on the basis of organisational structure,networks can be centralized, decentralized or distributed. Other configurations are also discussed. (p. 9)

5. ADVANTAGES:

Improved utilization of existing resources; larger base of knowledge available to serve needs; capacity to reach greater number of user; greater economy and efficiency of operation and reduces the duplication of collections in different locations. (p. 7)

9. REGIONAL:

IDRC and the Latin American Networks - IDRC experience with information networking.

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Banta, G. "The Use of Networks to Strengthen the Crops and Cropping Systems Group activity: A discussion paper." Mimeo, Agriculture, Food and Nutrition Sciences, IDRC.

1. DEFINITION:

"I suggest an agricultural research network would be a voluntary association of research organisations with sufficient common objectives to be willing to adjust current research programmes and invest resources in network activities in the belief that they will meet their objectives more efficiently than conducting all research alone." p. 3

2. TYPOLOGY:

Discipline, commodity and methodology networks. (pp.5-6)

3. FUNCTION:

Planning, cooperation, coordination. (p. 3)

4. CHARACTERISTICS:

Relies on Nestel, Hanchanlash and Tono. (p.4)

8. FUNDING:

Network can be divided into two group with long or short term objectives. This should be clearly stated and funding considerations worked out. (p. 4) (Relies on Nestel - p. 6-7.)

10. OTHER:

Examines the experience of the Crops and Cropping Systems Group of AFNS and discusses some operational considerations of developing a network: IDRC funding commitment, the advisory committee, the network coordinator, outside linkages and training. (pp. 6-11)

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Daniels Douglas and Kishk, Fawzy. "Improving Productivity Through Research Collaboration." Presented at the Seminar on Planning Management of Joint Research Projects, Sponsored by the Arab League, Tunis, 1982.

1. DEFINITION, 2. TYPOLOGY , 3. FUNCTION, 4. CHARACTERISTICS:

Relies on Nestel report.

6. IARC:

The existence of a regional or international centre is not essential in developing collaborative research programs and IDRC has supported a number of networks which link only national research centres.

10. OTHER:

IDRC supported food legume network of projects in the Near East and North Africa is discussed.

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Faris, D.G. "Agricultural Research Networks: Their Structure and Function" in Eastern and Southern Africa Network Coordinators Review. Faris, D.G., Ker, A., Kategile, J., Schmidt, O. eds. IDRC.May, 9-12 1988, Nairobi, Kenya. IDRC MR-204e. pp.7-12.

1. DEFINITION - An Agricultural Research Network:

"A group of scientists, representing a variety of agencies, should commit themselves to coordinating their research efforts towards some aspect to increase the world's food supply". (p.8)

2. TYPOLOGY:

*** **SPAAR** (P. 8) (this classification is regarded as one of the most significant contributions to date in developing a typology of networks) A useful classification divides agricultural research networks in SSA into

a) **Information Exchange networks:**"organize and facilitate exchange of ideas, methodologies and results of research currently underway."

b) **Scientific Consultation Networks:**"involve country-by-country focus on common priority research conducted independently by participants who hold regular meetings and have other means to exchange information on research."

2. TYPOLOGY: (cont'd)

c) **Collaborative Research Networks:** "involve joint inter-country (inter-institute) planning and monitoring of research on problems of mutual concern within a region. These could include information exchange, technical collaboration and training."

3. FUNCTION:

"Each network has a stated purpose - to share information, technology, research methodology, or research effort or a combination of these - in order to solve identified problems of mutual concern" (p. 8). "A network has a coordinating unit and a system for exchanging information and material among its members. Farmers are the ultimate clients of the technology developed by networks." (p. 8)

7. NARS:

The SPAAR model considers NARS as the basic unit making up Collaborative Agricultural Research Networks. SPAAR recommends networks to donors in order to strengthen the NARS component so they can effectively contribute to the network. p. 13. NARs are the basic unit of a network, yet often the weakest part. Therefore it is important to strengthen the role of NARs in networks so they can eventually take over the network operation. (p. 12)

10. OTHER:

Cites research networks and collaboration in SSA p. 11.

SPAAR was organized to bring much needed order to the large number of networks being started in Africa. (Appendix 1 provides a useful set of guidelines to a discussion of agricultural research networks.)

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Faris, D.G. "Agricultural Research Networks As Development Tools". IDRC and The International Crops Research Institute for the Semi-Arid Tropics. Manuscript 1990.

1. DEFINITION:

"...been used to describe the various arrangements and mechanisms developed to meet scientists' needs both for a timely and accurate exchange of information and ideas and for forging closer links for collaborative research."

- "in no field are research networks more important.... than in applied agricultural research"

- "networking has come to be regarded as indispensable to the efficient conduct of scientific research, whether national or international and regardless of the level of economic development of the country/ies involved."

1. **DEFINITION:** (cont'd)

CARNETs definition: (p.7) "An agricultural network is a group of individuals or institutions linked together because of commitment to collaborate in solving a common agricultural problem or set of problems and to use existing resources more effectively", (this defn. includes scientist, technicians, extension workers,farmer as well as institutions (national, international regional, donors, govt. agencies and agribusiness)

Also provided more complicated defn.: Banta, Plucknett and Smith. (p. 7)

2. **TYPOLOGY:**

Classification depends on the purpose of the classification:

- ex. if study dynamics and management classify according to level of involvement of different actors.

Classification considered most useful is SPAAR's based on the level of research in the network and the degree of collaboration used to plan and conduct research.

- type 1: inform. exchange-facilitates exchange of ideas, methodologies and research results;

- type 2: scientific consultation allows individual or groups to focus on common problem, conduct research independently and share results at common meetings;

- type 3: collaborative research provides joint planning and monitoring of common research problem.

Plucknett refines further by separating the technology base of ARNETS into information exchange, material exchange and research and by separating the planning base into independent and joint. This classification indicates the level of shared participation in planning and by implication in the operation of a network.

3. **FUNCTIONS:**

Network objectives (as determined at IDRC coordinators meeting in Nairobi, 1988, Faris and Ker 1988):

a) strengthen applied research capability of NARS to identify, address and solve farmers's problems;

b) generate appropriate technology by using research personnel, facilities and resources more effectively

c) ensure stability of agricultural production through a responsive research capability

d) provide support (technical and financial) needed to facilitate the coordination of activities on a regional basis

4. CHARACTERISTICS:

Based on frequency of citations in 23 articles on networks, Faris draws up a list of factors important in the success of a network. His contribution to this repeated task, is the grouping of points into components as opposed to characteristics (see Winkelmann). This is a more useful and flexible approach. His components include: a) research; b) coordination; c) communication; d) members; and c) assets. (See table p.18)

Faris, in the body of his manuscript, expands on each component, elaborating on its characteristic and providing numerous examples.

5. ADVANTAGES/DISADVANTAGES (pp. 1-5) (cross-reference with 6. IARCs and 7. NARS)

Faris uses network objectives as a useful way to put costs and benefits into perspective: focus: no.1

5/6 BENEFITS TO IARC's:

a) Ideal way of solidifying partnerships with national scientists.

b) Use networks to channel technology to NARS for use by farmers.

c) Research programs provide a way to test material under a wide range of conditions and encourage feedback from NARS, national scientists and farmers.

COSTS TO IARC'S:

a) IARC's normally provide a network coordinator and support staff and much scientific backstopping. Also provide network's administration, operation and communications.

b) IARC's must be prepared to hand over to NARs the responsibility for research that currently falls within their mandate, as the NARS demonstrate their ability to do the research.

c) IARC's must adjust their research plans to continue to support and strengthen the research programs of NARS's

d) In collaborative network activities, IARCs need to give full credit to NARS for their input.

5/7 BENEFITS to NARS:

Strengthen research program directly associated with the network and improve members' ability to do research in other programs.

a) NARS strengthen by just being involved in activities of a network.

b) NARS strengthen where each member takes responsibility for conducting a component of the strategic research program and receives support to carry out the research.

c) Over time NARS's responsibilities in each network increases.

d) Networking strengthens a NARS's scientists by reducing their isolation, and by increasing the chance of meeting peers in their own and other disciplines. Through workshops, scientists can share ideas, results and interact with international experts.

e) Networks provide a forum for national scientists to publish research results. This allows them to contribute to newsletters, proceedings etc. Their association can provide access to research equipment, library and literature search facilities. Networks may also prompt IARCs to give courses to improve participants's skills for contributing to the network's research.

COSTS TO NARS:

If any network activity does not strengthen NARS than it may be considered a cost not a benefit.

a) Commitment of existing staff and facilities to a network requires freeing time for travel, attendance at meetings, workshops, monitoring tours, training and the preparation of reports.

b) In some networks, NARS have to bear the cost of hosting network workshop and training programs. Even with external financial assistance, the time devoted by staff for these program can be a considerable cost.

c) By participation in a network NARS relinquish some control over their research agenda and may even have to dedicate key researchers to work that does no address their priorities. In fact a network with strong financial backing may entice researchers to abandon research with weak support and may distort NARS's opportunities. NARs therefore should be careful in the selection of networks and not be enticed by donors to accept inappropriate networks.

d) Large NARS can dominate a network and absorb its resources. Network planners must ensure that weak NARS benefit most from a network even through their share of resources is smaller. Sharing resources fairly in a network is a challenge.

e) The commitment of time and resources to network activities reduces the time for the scientist's own research and increases with the numbers of networks in which the scientist participates.

BENEFITS TO DONORS:

a) Aid to allocating funds, identifying high-priority problems, direct assistance to well-organized targets and reduce duplication of effort.

b) Networking is used to bring together staff from projects with similar themes to benefit from each others experience.

COSTS TO DONORS: (p. 5)

a) Provide funds to groups other than IARC's to coordinate network activities. For example, they direct funds to regional institutes.

b) Donors may dedicate their own staff to coordinate networks but they often provide support through IARC's.

c) Donors often have to set aside small sums for network coordinators to ensure continuity in research in the event that NARS funds for research activities are not sufficient.

The efficiency/effectiveness of network: (p. 5)

Networks may pay a price in terms of research efficiency arising from less accountability of scientists to the network than to their own administration.

There needs to be an evaluation of the cost-benefit ratios of using well-funded multidisciplinary institutes compared with networks for providing answers to problems. (Faris believes that the effectiveness depends on the importance of the problem to be solved and the clarity of the research objective.) Networks are probably more effective in tackling problems that are straightforward and limited and where the objective is time bound. They are probably more cost effective in dissemination of research results over a wide area than if done at isolated institutes.

6. IARC and 7. NARS:

The return on investment in networks needs to be compared with that for similar investments in IARC's or in NARS's although FARIS believes that the three complement each other and that all should be supported.

6. IARC and 7. NARS: (cont'd)

In the long term each NARS must be able to provide the agricultural research needed for its country. This is why IARC's, donors and networks alike aim to strengthen NARS's. IARC's fill the research gap until NARS's are fully capable of conducting their own research. IARC's do the research that NARS's are not yet capable of doing. Networks support both NARS and IARC's and tie their research together. In some cases network have fulfilled the role an IARC would play.

10. OTHER: Evaluating Networks:

Faris makes another important contribution by addressing the issue of evaluation as deserving more attention. He argues that ideas can be borrowed from existing evaluations on NARS and projects.
Major contributions made to date:

- Webster: workshop on impact of research on national agricultural development.
- Daniels: workshop on evaluation.
- CGIAR evaluations of the level of collaboration in agricultural research between the CGIAR centres and NARS.
- Castronovo:Detailed outline of methods and questionnaire his evaluation of five agricultural information in projects in LA.
- Nestel study.
- Valverde's (1988) method (the most useful contribution to date) which aims to identify and analyze the main constraints and elements that influence the execution of ARNET programs. His model draws on how networks function and on empirical deduction about what effects it has. Figure 8. illustrates in a flow chart his model and is supported by description pp. 48-51. See text for elaboration.

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Glover D., Shaeffer,S. Krugmann, H., Vita,P. "Report on Networks," July 1987, IDRC, Social Sciences Division, pp.1-8.

2. TYPOLOGY:

Can characterise networks by: (p. 5)

a) Purpose.

b) A priori or ex post: networks designed as such from the outset as opposed to those which coordinate pre-existing projects.

c) Centre-administered as opposed to recipient/third party administered.

d) Networks in which the components are carried out by institutions versus individuals.

e) Networks which link substantial research projects versus those which are close to small grant schemes.

f) One-off versus continuing networks.

g) Those which emphasize knowledge production versus capacity building (note: we could also add information exchange).

h) Global vs. regional vs. national networks.

3. FUNCTION: (p. 7)

a) **Comparative research:** -highlights key issues that might be overlooked or taken for granted in a single case - draw conclusions with broader validity.

b) **Specialization:** - network components can concentrate on one aspect of the network allowing for a more cost effective use of resources.

c) **Methodological development:** by broadening the base of experience, in both problems and experimental solution, the opportunities for making methodological breakthroughs are increased.

d) **Economies of scale:** by increasing the number of project on one theme, IDRC can afford investment which would not be feasible for single projects - for example, literature searches, training, contacts with other agencies...

e) **Greater impact:** multicountry projects may attract greater attention and as a result have a correspondingly higher chance of impact.

f) **Transfer of knowledge from advanced to less developed countries:** the involvement of NIC's and LDC's in a network can result in learning both in research content and research methods

g) **Institutional surrogates:** in poor research environments a network can provide for the researcher elements which the home institution does not provide (ex. access to literature, peer review, publications outlets, international contact, support...)

5. ADVANTAGES/DISADVANTAGES: (p. 7-8)

a) Increased labour for IDRC as research direction, coordination and administration are time consuming.

b) In many regions (esp Africa) institutions capable of coordinating and administering projects/networks do not exist or operate under restricted conditions.

c) Unnecessary networking and wasted resources can result from an unclear rational for the network and lack of clarity in its objectives.

d) Lack of definition over responsibilities and authority of the coordinator or coordinating institution vis a vis IDRC and network members can create problems.

5. ADVANTAGES/DISADVANTAGES: (p. 7-8) (cont'd)

Possible solutions: p. 8

a) Greater use of consultants and project coordinators.

b) Build into projects, funds to allow evaluation and phase two development.

c) Continued use of Centre administered projects, especially in the poorest regions.

d) Clearly specify network objectives and structure the network to meet them.

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Greenland, D. J., Craswell E.T. and Dagg, M. "International Networks and Their Potential Contribution to Crop and Soil Management Research" in Outlook on Agriculture, vol 16. no.1. 1987. pp. 42-50.

4. CHARACTERISTICS:*

* Includes Plunkett's list of 7 characteristics and adds two further points:

- "... are sufficient new materials ideas and technology feeding into the network. This means that some at least of the participants should be generating adequate new research results, or that the network is associated with international centres or other research organizations able to nourish it." p. 43

- "that the participants must be involved in the management of the network, through the appropriate coordinating committee..." p. 43.

7. NARS:

(i) Influence of International Networks on National Agricultural Research Systems:

- networks offer advantage to NARS only if they are responsive to the needs of the national programmes, and continue to be so. p. 49.

- an effective network will seek to contribute to national programme development while the core of its collaborative activities will be based on specific research and methodologies.p. 49

Danger: a strong network has the potential to distort a national programme and even the national system as a whole. (p. 49)

Danger can be avoided if the national programme leaders have sufficient opportunity to participate in deciding how the network will be managed, how it will operate, and what relationship it will have to the national research system.

Danger can be reduced if the national programme funds its own activities - it is likely to participate only in activities that contribute to its own priorities. (p. 49)

- Little doubt that most national programmes can benefit from participation in international networks, its important that they are managed as efficiently as possible so benefits are available without causing unnecessary work. Improved analysis of existing data, better site characterization, can avoid conducting unnecessary trials or studying unnecessary locations or material. Improved coordination of different network activities, (those operating in one centre and of different centres) can also help. p. 49

- An economic analysis of agricultural research priorities, (J.S. Davis, P.A. Oram and J.G. Ryan "Assessing Aggregate Agricultural Research Priorities - An International Perspective ACIAR-IFPRI Draft Report 1986) suggests that, " the contribution of spillover effects from regions where research is conducted to other regions with similar agro-ecologies and infrastructure is substantial. Research networks enhance the mutual benefits to be gained from spillover effects. The recognition of this by national programme leaders and aid donors will ensure that research networks will continue to play an important role in international agricultural research." (p. 49)

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Iyamabo, Dominic E. "Strategies for Strengthening National Agricultural Research Systems". in The Impact of Research on National Agricultural Development. Webster, B., Valverde A. and Fletcher.eds. ISNAR, The Hague, Netherlands, 1987. pp. 155-159.

7. NARS:

While collaboration with other scientists and institutions is cited as a strategy for strengthening NARS, plus the limits of research capability and funds are cited, the author does not explicitly discuss the use of networks as a mechanism to strengthen NARS.

The article refers to the following topics:

- Definition (p. 155)
- Criteria for an effective NARS (p. 155)
- Present weaknesses in NARS (p. 155-6)
- Strategies for Strengthening NARS (p. 156-7)

NOTE: See the annotated bibliography for listing of the above points.

9. REGIONAL:

"Africa has some of the weakest NARS in the world, In view of the key role of research in agricultural production , anyone interested in improving agriculture in Africa should give special attention to NARS in the continent." (p. 159)

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Kirkby, Roger A. "Implementing Agricultural Research Networks: Some Principles and Issues". in Eastern and Southern Africa Network Coordinators Review. D.G. Faris and A.D.R. Ker eds. IDRC. MR 204e. 1988. pp. 20-23.

4. CHARACTERISTICS:

Relies on Plucknett and Smith. (p. 20)

5. ADVANTAGES/DISADVANTAGES:

a) Too many meetings: extra time. (p. 21)
b) Overburdening national research capacity. (p. 21)
c) Concentration on stronger members: larger NARS are often focused on due to their ability to produce research results more quickly, to the detriment of smaller NARS which have the most to gain from network participation. (p. 21)

6. IARC:

A contradiction exists. On one hand, networks attempt to provide linkage mechanism that enable a group of countries, institutions or researchers to accomplish more through collaboration then could be done individually. On the other hand, most networks have their origin and driving force in an institution such as an IARC or donor organisation which is equip with its own interests which generally differ from that of NARS. (p. 20)

9. REGIONAL:

If networks evolve as the strengths of NARS grow, what can Africa learn from LA and Asia?

10. OTHER:

Issue of sustainability (p. 22): Requires long term planning by NARS, IARCs and donors. At what stage should a network pass to local coordination or be phased out? Who should coordinate?

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Martinez-Nogueira, Roberto. "Agricultural Research Networks: An Analytical Framework", in Workshop on Research on National Agricultural Development. in Webster, B. Valverde, C. Fletcher, A. eds. ISNAR. The Hague, Netherlands, 1987. pp. 105-23.

NOTE: Article draws heavily on Winkelmann, Plucknett and Smith, Valverde.

7. NARS:

The main contribution of the article: Provides conceptual and analytical tools to attempt to measure capabilities of NARS and the impact of members in a network.

A network is conceptualized as a way of promoting international scientific and technological capability, as each network should be thought of in terms of its members' development and its own, leading to a progressively more complex levels of complementation and integration of national systems. (p. 126)

Nogueira contributes more than other commentators to the discussion of NARS and networks by providing a growth path as a tool to assess the changing S&T capability of NARS. It is argued that a national systems scientific capability is expressed by the distribution of various research categories (the technology generation process is classified into basic - strategic- applied and adaptive research) in its programs. The authors see a developmental path as existing along which NARS more progressively upward to more demanding activities. It is inferred that contribution to a network will be determined by capability. One main objective of a network is to create a capability for the progressive achievement of greater added value in the contribution of each participant and of increasing homogeneity of their contributors.

Provides an analysis of network complexity based on the nature of a networks activities. A development path involving a progression towards the incorporation of a larger number of activities with greater integration in the implementation of these functions is conceptualized. (p. 122)

- identification of problems and needs
- definition of priorities
- selection of objectives
- drawing up of work plan
- scheduling of activities and projects
- implementation
- monitoring and evaluation
- transfer of results.

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Nestel, B., Hanchanlash, J., Tono, H. "IDRC Project Networks: An Appraisal of Past Strategy and Recommendations for the Future." Office of Planning and Evaluation, IDRC, Ottawa, August 1980.

1. **DEFINITION:**

"An inter-related or inter-connected system". (PP.3.1)

2. **TYPOLOGY:**

IDRC funded networks are of two types:

a) **horizontal**: "the network is a single project which has a number of researchers in different countries working on a common problem". (PP.3.2)

b) **vertical**: "network may involve a number of quite separate projects in different countries, all of which are working on an inter-related theme ..." (PP 3.2)

8. FUNDING: (PP.5.1-5.5.; 7.53; 7.66)

NOTE: This report provides the most thorough discussion of this topic - refer to document.

Extensive discussion (supported by IDRC illustrations) regarding the life cycle of networks.

- The required life span is not always easy to identify at the inception of a network as the performance of various components is hard to predict.
- IDRC does not appear to have a policy guideline relating to one off versus permanent networks. (5.4)
- When IDRC networks are initiated it is often unclear what will become of the network when IDRC support terminates. (7.53)
- It is recommended in the report that in "any document relating to a network project, it should be clearly stated what degree of permanence the network is expected to have". (7.64)

The report recommends that "the project summary should clearly indicate how many years the Centre is expected to support the network. We believe that is desirable that IDRC support should be phased out during the second or third phase of a network rather than ceasing abruptly at any one point in time. The documentation regarding phasing out should give a firm indication as to the mechanism of support for continuation, i.e. whether this will come from other donors or be self-financing." (PP.7.65)

The report discusses the problems encountered at network termination by examining the experience of four networks: (PP. 5.5-5.16)

10. OTHER:

- Why IDRC is interested in networks - relationship to mandate. (PP 3.4-3.7)
- The scope of IDRC's network involvement. (PP.3.8-3.10)
- Divisional approaches to networks: 1. AFNS - PP.4.1-4.6; SS - PP.4.7-4.13; IS - 4.14-4.16; HS - PP.4.17
- Nature of the Grantee Institution. (PP. 4.18-4.24)
- Linkage Mechanisms: Coordination (PP.4.25-4.43)
  Project Identification Meetings (PP.4.35-36)
  Advisory Committees (PP.4.37-.38)
  Exchange of Personnel (PP.4.39)
  Training (PP.4.40-4.43)

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Plunkett, Donald and Smith, Nigel J. H. "Networking in International Agricultural Research". Science. vol.225. September 7, 1984, pp. 989-991.

NOTE: Based on experience of IRRI and CIMMYT.

4. CHARACTERISTICS: (p. 990)

Principles of Success:

a) clearly defined/realistic research agenda
b) problem be widely shared
c) members have strong self interest
d) members willing to commit resources -personnel, facilities
e) outside funding to initiate and maintain network for first few years
f) members have sufficient training /expertise to make a contribution
g) strong efficient leaders to guide network

5. ADVANTAGES/DISADVANTAGES:

Looking specifically at IIRI/CIMMYT nurseries networks. (p.991-99)

7. NARS:

"Networks are not a substitute for the long-term task of upgrading national programs". (p. 225)

9. REGIONAL:

"In the Third World, agricultural networks are generally better developed in Asia and Latin America because national programs are stronger in those regions". (p. 225)

"A less tangible but equally important benefit of networking is institution building in the Third World. Networks help to identify leaders in developing countries and expose scientists to new methodologies and technologies. Workshops and training courses play crucial roles in this effort to upgrade the effectiveness of national programs. (p. 225)

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Winkelmann, R. "Networking: Some Impressions From CIMMYT." The impact of research on national agricultural development. In Webster, B., Valverde, C., Fletcher, A., ed. ISNAR, The Hague, Netherlands. pp. 125-134.

4. CHARACTERISTICS:

A chart of twenty characteristics most cited by six authors is provided on page 133.(Note that,in his draft entitled, Agricultural Research Networks as Development Tools Faris, also provides a list generated by reviewing 20 authors.) The difference between these lists is that Winkelmann lists characteristics while Faris lists network components which group characteristics. Winkelmann's points are accommodated by Faris's components.

Winkelmann argues that too much stress is placed on the role of a network leader or coordinator. He suggests that, the emphasis should be taken off a single individual and placed on an advisory group. A steering committee is seen as indispensable for an effective network.

2. TYPOLOGY:

Winkelmann presents the SPAAR three type classification of networks based on degrees of integration (p. 126) Different levels require differing degrees of resource commitment, and obligations.Type 1. facilitates information exchange, building on this type 2, adds meetings where professional exchange ideas directly on jointly identified themes. Type 3. involved the second plus adds joint priority setting, planning, implementing and monitoring of defined undertakings, probably with some division and assignment of tasks. Increasing degrees of integration imply increasing commitment of national resources, greater reliance on the network and greater complexity and coordination.

While other authors discuss the SPAAR model, Winkelmann makes a further addition to the discussion by addressing the question, "what factors influence the degree of integration of a network?"

He presents two hypothesis: 1. "the more homogeneous a country's agriculture, the more likely it is to have a critical mass of resources for its priority research themes and the less abundant the research resources relative to the various critical masses needed, the more advantageous is fuller integration in networks." 2. The availability of a critical mass is closely related to the definition of the problem. " It can be argued that the narrower the problem is defined, the less the need for joint priority fixing and planning". (p. 128)

The disadvantages of integration are cited by asking, "Under what circumstances might a research director choose a lesser over a fuller integration with a network?"

- might be reluctant to surrender to the researchers of another country the responsibility for the significant problems of an important crop
- hesitant to commit their resources to a single line of research - risk management
- a higher probability of progress potentially exists when programs compete actively among themselves - sharing material serves as a standard against which performance is judged p. 129.

5. ADVANTAGES/DISADVANTAGES:

PRO: Efficiency - not just in the sense of avoiding duplication of efforts but networks can accrue efficiency gains because "workers can concentrate on specific or individual problems rather than being required to disperse energies across a range of problems..." (p. 126)

Networks encourage and develop self-reliance and the capacity to perform among those who participate.

Argument: one is disposed to endorse the arguments for networks based on concentration, critical mass and the exchange of ideas, however, what is the cost of encouraging self-reliance through the network as opposed to other options? Furthermore, duplication can raise the probability of attaining a given outcome.

From a donor viewpoint, networks "can be an efficient vehicle for supplementing national support to research". (p. 126)

Disadvantages: related to the complexity of managing networks. Coordination is difficult given the uneven experience and differing levels of commitment between members. The cost of bringing participants together can also be substantial.

6. IARC: (p. 128)

Most authors ascribe to IARC's a coordination role in networks. This is based on their ability to attract funding, on their scientific competence, on the trust national programs put in their even handedness and on their connection to up-stream research. However, IARC'S are criticized by some for their regard of the network as an instrument of the centre.

The issue emerges, does IARC's role in coordinating inhibit the goal of NARS capacity building? "To the extent that IARC's accent the development of national program capacities, shaping decisions to this end, and to the extent that more effective communication makes for more effective research, there is a clear coincidence of interest on networks among IARC's and the NARS. And that interest, the fostering of communication and competence, would seem to be the point on which IARC participation in networks should properly rest." (p. 128)

10. OTHER:

Cautions that networks are not a panacea. They are a means and as such must be judged.

Evaluative Comment: "...a network's structure should be a function of its problem or goal". (p. 127)

Experience of CIMMYT and networks. (pp. 129-132)

NETWORKS AND NETWORK RELATED PROJECTS SUPPORTED BY IDRC

The following list is not exhaustive but is an initial list of project numbers and titles for network related projects since 1980 and a preliminary list of networks supported by IDRC.

The sources of this information are project completion reports, OPE correspondence, project summaries, DAP's and IDRC manuscript reports.

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DIVISION: SOCIAL SCIENCES

Number of projects: 62

Population, Education and Society Program (PESP):

3-P-82-0181
Qualitative Research in Education (Latin America)

3-P-83-0013 Household Demographic Research: Global

3-P-84-0277
Action Research Network for Education and Development (Indonesia)

3-P-85-0280 Fertility Transitions: Asia

3-P-85-0174
Educational Research Network of East and South Africa (ERNESA) Nine Countries

3-P-86-0192
Participatory Research in Community Education (Philippines)

3-P-86-0310 Research in Distance Education (South East Asia)

3-P-87-0125 (01-10)
Educational Research Network for Eastern and Southern Africa (II)

3-P-87-0207
Regional Research Review and Advisory Program in Education, SE Asia (II)

3-P-88-0204 (01-08)
Les Politiques des Langues Nationales dans les Systèmes Educatifs

Population, Education and Society Program (PESP): (cont'd)

3-P-88-0259
Network Support: Thai Qualitative Research

3-P-88-0374
Education and Cultural Transformations of Andean Indians

3-P-88-0389
Education and Work Network (Latin America)

3-P-89-0079
Educational and Research Network of Eastern and Southern Africa

3-P-89-0120
Réseau de Recherche en Education de l'Afrique Occidentale et Centrale

3-P-89-0121 (01-04)
Morbidité et Mortalité Maternelles

Economic Policy Networks:

3-P-84-0285
Savings and Investment: Latin America

3-P-84-1036
Trade and Protectionism: SE Asia

3-P-85-0074
Debt Renegotiation: Latin America

3-P-85-0079
Trade and Financial Strategies: Global

3-P-86-0026
Contract Framing: Eastern and Southern Africa

3-P-86-0123
Agricultural Marketing: West Africa

3-P-86-0273
Potato Marketing: Latin America

3-P-86-0292
Macro Network: Eastern and Southern Africa

Economic Policy Networks: (cont'd)

3-P-87-0112
African Economic Research Consortium

3-P-87-0121
Macroeconomic Research, Latin America

3-P-87-0139
Contract Farming, SE Asia

3-P-88-0121
G24 Technical Support Service

3-P-89-0102
Technology Policy Research Network (East and Southern Africa) Phase III

3-P-89-0103
Technology Policy Research Network (West Africa) Phase II

3-P-89-0192
Export Revenue Management, Latin America

3-P-89-0338
Structural Adjustment and Agrarian Crisis Africa

3-P-89-1033
Debt/Trade Bargaining, Phase III (Global)

Energy

3-P-84-0291
Rural Energy Technology Assessment and Innovation Network (RETAIN)- Global

3-P-86-0243
Energy Policy and Planning, East and South Africa

Urban/Regional:

3-P-83-0023
Low-Cost Travel Modes (South Asia)

3-P-84-0041
Regional Socioeconomic Impacts on Export-Processing Zones

3-P-84-1005
Urban Growth Management Africa

Urban/Regional: (cont'd)

3-P-86-0020
Rethinking the Latin American City

3-P-86-0194
Town Development (China)

3-P-87-0120
Rental and Shared Housing (LA)

3-P-87-0145
Regional Socioeconomic Impacts of EPZs (S.E. Asia)

3-P-87-0251
Local Government (LA)

3-P-88-0123
Urban Energy Consumption and Air Pollution Network (S.E. Asia)

3-P-88-0124
Regional Development and Indigenous Minorities (S.E. Asia)

3-P-88-0250
Rural Industrialization in Asia (S.E. Asia)

3-P-88-0277
Natural Disasters and Risk Zones (L.A)

3-P-89-0104
Comparative Evaluation of Regional Development in ASEAN Countries

3-P-89-0288
Local Government (Zimbabwe and South Africa)

Science and Technology

3-P-85-0146
Assimilation and Absorption of Imported Technology

3-P-85-0164
Technology Policy Studies (West Africa)

3-P-85-0277
Technology Policy Studies (East Africa)

Gender and Development

3-P-88-0200
Women and Natural Resource Management in Africa (WEDNET)

GETNET: Gender and Environment Network in L.A. (a new project for Oct 30)

Networks: Including Projects where known

Network on Adolescent Fertility:

3-P-86-0325
Fécondité des Adolescentes au Bénin

3-P-86-0326
Fécondité des Adolescentes au Sénégal

3-P-86-0327
Fécondité des Adolescentes , Traditions, et Législation

3-P-86-0335
Fécondité des Jeunes et l'École (Congo)

3-P-87-0150
Fécondité chez les Adolescentes (Cameroun)

3-P-87-0159
Fécondité et Comportements Socio-Psychologiques chez le Ministère de l'Education Nationale

3-P-87-0160
Fécondité chez les Adolescentes (Mauritanie)

3-P-87-0176
Fécondité chez les Adolescentes (Côte d'Ivoire)

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DIVISION: INFORMATION SCIENCES

Number of Projects: 11

82-0029-00
Barbados Library, Archive and Information Centre Network (Blain)

83-0047-00
Rialide- Network Strengthening

Information Sciences Division (cont'd)

84-0063-00
Latin American Trade Information Network (RELIC)

84-0073-00
Latin American Health Information Network

84-0142-00
Caribbean Technological Consultancy Services Network (CTCS)

84-0197-00
Docpal Brazil Network Development

85-0082-00
Latin American Communications Network for Non-Governmental Organisations

85-0119-01
Development Information Network for South Asia (DEVINSA)

86-0242
Latin American Communications Network for Non-Governmental Organizations (Phase II)

3-A-88-4228
Caribbean Information Network (OPE, administered by IS) -DAP

89-0193
Computer-Based Networking in Africa (PADIS)

A list of networks that IS supports:

-West African Farming Systems Network (collaborative effort between ISD and AFNS)

-The International Network on New and Renewable Energy Resources and Technologies for Asia and the Pacific (INTERTAP)

Regional Networks in Latin America:

-AGRINTER
-BIREME
-CLACSO
-CLAD
-DOCPAL
-ILET
INFOPLAN
LATINAH
PLACIEX
REDUC
REPIDISCA
RIALIDE

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DIVISION: AGRICULTURE, FOOD AND NUTRITION SCIENCES

Number of Projects: 33

80-0185
Forestry Co-operative Research (Africa) phase II

80-0132-00
Oilseeds Network (Eastern African and Indian Regions)

81-0133-00
Tropical Pastures Network (Columbia)

83-0128-00
PRACIPA Network (CIP) phase I

83-0175-00
Oilseeds Network (Ethiopia) phase II

83-0217-00
Tropical Pastures Network (Columbia) phase II

84-0211-01
ASIAN Fisheries Social Sciences Research Network Phase II

84-0215
Mariculture II (Panama)
(Aquaculture Network - LARO)

84-0224-00
Banana and Plantain Network (INIBAP)

84-0306-00
Bamboo/Rattan Network (Asia)

85-0007-00
Afforestation Network (Chile)

85-0008-00
Fertilizer Network (IFDC/West Africa)

85-0017-00
Banana and Plantain Network (INIBAP) Phase II

85-0081-00
Caribbean Rice Network (CIAT)

Agriculture, Food and Nutrition Sciences Division (cont'd)

85-0250-00
Bamboo/Rattan Network (Asia) phase II

85-0256-02
Animal Production Systems Network (Latin America)

85-0256-03
Animal Production System Network (Latin America)

85-0258-00
Banana and Plantain Network (INIBAP) Phase III

85-0272
Scallop Peru
(Aquaculture Network - LARO)

85-1051-03
Fish Genetics Network (Dalhousie/Asia)

85-1051-04
Fish Genetics Network (Dalhousie/Asia)

85-1051-05
Fish Genetics Network (Dalhousie/Asia)

86-0144
Regional Aquaculture Network (Phase I)
(Aquaculture Network - LARO)

86-0203
Aquaculture (Brazil)
(Aquaculture Network - LARO)

86-0241
Pracipa Network (CIP) phase II

86-0263
Root Crop Utilization (Philippines)

86-0269-00
Fertilizer Network (IFDC/West Africa) phase II

87-0025
SII Oilseeds Network (Ethiopia) Phase III

Agriculture, Food and Nutrition Sciences Division (cont'd)

87-0079-00
Forest Regeneration (Chile) phase II87-0149

Mariculture
(Aquaculture Networks - LARO)

87-0151
Aquaculture Development (Colombia)
(Aquaculture Network - LARO)

87-0201-00
Banana and Plantain Network (INIBAP) Phase IV

87-0233-00
Tropical Pastures Network (CIAT) phase II

3-A-87-4208 (DAP)
Food Legumes Review: Middle East and West Africa

88-0264-00
Banana and Plantain Network (INIBAP) phase V

88-0300-00
Fertilizer Network (IFDC/West Africa) phase III

89-0017
Aquaculture Development Thrust (Phase II) (Colombia)
(Aquaculture Network - LARO)

89-0036-00
Animal Production Systems Network (LA) phase II

89-0065
Marine Larvae Regional (Chile) Training Purposes
(Aquaculture Network - LARO)

89-0342
National Aquaculture Network (Colombia)
(Aquaculture Network - LARO)

89-0343
Mollusc Culture (Indonesia) II (part of the IDRC Sponsored Mollusc Culture Network)

Agriculture, Food and Nutrition Sciences Division (cont'd)

Names of Networks that AFNS Supports

Research networks which receive support from CAPS for their core activities:

- Latin America Tropical Pastures Network (RIEPT)
- Latin American Animal Production Systems Network (RISPAL)
- Andean Potato Network (PRACIPA)
- Alley Framing Network for Tropical Africa (AFNETA)
- International Network for the Improvement of Bananas and Plantains (INIBAP)
- West African Farming Systems Research Network (WAFSRN)
- West African Fertilizer Management and Evaluation Network (WAFMEN)
- African Research Network for Agricultural By-Products (ARNAB)
- Pasture Network for Eastern and Southern Africa (PANESA)
- Oilcrops Network for Eastern Africa and South Asia (ONEASA)
- Eastern and Southern Africa Rootcrops Research Network (ESARRN)
- Asian Rice-Based Farming Systems Networks (ARFSN)

Less formal networks supported on a regular basis for certain activities (ex. annual coordination meetings) mainly from DAP funds:

- East African Sorghum and Millets Networks
- Small Millet Network
- Andean Crops Network
- West African Animal Traction Network
- International Network for the Improvement of Lathyrus Sativus and the Eradication of Lathyrism

The Fisheries Program supports seven networks:

- Asian Fish Nutrition
- Asian Fish Health
- Aquaculture Genetics in Asia
- Asian Fisheries Social Science Research Network
- Aquaculture Network (LARO)
- Mollusc Culture Network (Global)
- Artisanal Fisheries Network (LARO)

Forestry Program supports three networks with varying degrees of formality, linking IDRC projects:

- Bamboo/Rattan (14 projects in Asia and 1 in Africa)
- Arid Zone Afforestation (8 projects in Latin America)
- Southern Africa Afforestation (9 projects in Southern and Eastern Africa)
  Forestry support the Indian Mycorrhiza network which links a large number on non-IDRC supported scientists and institutions.

Agriculture, Food and Nutrition Sciences Division (cont'd)

AEP

- Asian Rice Farming Systems Network
- Asian Fisheries Social Science Research Network
- AEP administers the West African Farming Systems Network
- AEP has assumed a more active role in East African in the Oilcrops -Network administered by CAPS

PPS

- Post Production Systems (SADCC)
- ASEAN Grains Postharvest Program

(Both are jointly funded with CIDA and managed by IDRC.)

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DIVISION: FELLOWSHIPS AND AWARDS

Number of Projects: 1

3-A-88-4074
Feasibility Studies HRD-Network (Latin America)

IDRC

CANADA

The Evaluation System

Building the knowledge base

Since the International Development Research Centre was established in 1970, it has supported several thousand projects in over 100 countries. A coordinated system of evaluations is essential to ensure that the knowledge gained from this work is fully understood and effectively used.

The evaluation system feeds the Centre's corporate memory, supports ongoing research, and contributes to the processes of planning and decision-making. It is a decentralized, flexible system that uses a wide range of tools and techniques, depending on the purposes of specific evaluation studies. Coordination of the system is one of the primary functions of the Centre's Office of Planning and Evaluation (OPE).

The key elements of the system, described in this booklet, are

- Division Evaluation Plans
- Evaluation Assessments
- Project Completion Reports
- Selective In-Depth Studies
- Division Strategic Reviews

> "To evaluate the attractiveness of research as an investment we must have a measure of both its costs and its returns. Cost figures, at least for public expenditures, are available and, therefore, have not been a major problem. Measuring the value of knowledge is another matter."[1]

July 1990

In addition to coordinating these activities and conducting Centre-wide studies, OPE on request provides input (and occasionally funding) for evaluation studies carried out by the program divisions or the regional offices. It maintains an inventory of reports, publishes findings in the form of evaluation abstracts, and is responsible for OPEIS, the Centre's evaluation database.

An important role of the system is to help build evaluation capacity in developing countries by involving Third World nationals in the process wherever possible. This also helps to ensure that findings have utility and relevance to the research community in the field.

Defining evaluation

Post-project evaluation is defined as the systematic collection and analysis of information following the completion of an initiative. It measures the "value" of an activity in terms of efficiency, outcomes, relevance, and effects — positive or negative, anticipated or unexpected. In other words, post-project evaluation gathers information on how things have worked (or not) and under what conditions.

The fundamental purpose of evaluation is to facilitate and improve planning and policy-making at all levels, both in the Centre and in the institutions it supports. Because of the wide variety of activities and institutions supported by the Centre, no single evaluation method is promoted. Solid quantitative data are not always obtainable, so that evaluation frequently must rely on less quantifiable but equally valuable data based on the insights and perceptions of the project's participants and beneficiaries. Ideally, both qualitative and quantitative data are used to corroborate findings.

The Centre views the evaluation process itself as a capacity-building force and all the participants in a project as an important resource for evaluation. Rather than striving for "pure objectivity," the Centre gives precedence to involving the stakeholders in its evaluations wherever possible.

There is no prescribed formula to determine which projects will be evaluated, or when — although the Project Completion Report is mandatory. Questions that determine which projects and programs should

be evaluated might include the following: Is there a need to make a decision concerning a particular problem or program feature? What is the level of past investments? What commitments and future intentions does the Centre have? In addition there are factors such as the cost, purpose, and likelihood of the study producing useful results.

> "It may not be possible to lay down neat, cut-and-dried procedures for evaluation to fit into every situation. Had it been a simple, straightforward exercise, even countries with more than half-a-century of experience in agricultural research would not still be grappling and groping. We should not, however, be daunted by these difficulties, but accept the challenge of developing implementable and reliable methodologies for evaluation..."[2]

Coordinating evaluation

Certain policy issues important to the Centre are used by OPE in coordinating and analyzing evaluations. These currently include

- Defining and understanding the research-for-development process;
- Increasing the probability of effective use of outputs from Centre-supported activities;
- Identifying mechanisms to increase research capacity in the Third World;
- Assessing the merits of concentration of Centre resources;
- Monitoring the effectiveness of Centre support for programs in Africa, compared with other regions;
- Identifying research systems and potential for small countries;
- Understanding the costs, benefits and suitable conditions for various research categories, including interdisciplinary systems, participatory, basic, applied, and other research;

- Identifying preconditions for creating and operating research networks;

- Decentralizing staff, delegation of authority to regional offices, and devolution of responsibility to Third World institutions; and

- Striking a balance between resources devoted to program delivery and to administrative support.

Two documents, the Division Evaluation Plan and the Evaluation Assessment, are the principal vehicles used by the OPE in coordinating evaluation activities.

Division evaluation plans

Each of the Centre's program divisions prepares a Division Evaluation Plan. These Plans help identify relationships among evaluations being proposed by the different divisions. They are also used to pinpoint those areas where evaluations could be carried out to complement policy of planning studies. The plans may cover periods of from one to three years.

Plans may include studies of individual projects, groups of projects and programs, or issues that cut across all project activities within the divisions. The output from the implementation of these plans is aimed at meeting the information needs of divisional planning: the two-year operational plan, and in particular the long-term strategic plans.

Evaluation assessments

The assessment is equivalent to a brief project appraisal and is done before committing resources to any individual evaluation. Assessments are prepared in collaboration with whoever has requested the study and are retained by the OPE. They provide specific details of the proposed study, such as the purpose and client, issues to be addressed, methodology to be used, and the resource implications. The purpose of the assessment is either to indicate the most effective way to proceed with the study, or to conclude that a formal study is not needed.

Tools for evaluation

The three essential tools used in the evaluation process are the Project Completion Report, the Division Strategic Review, and the Selective In-depth Study.

Project Completion Reports

Project Completion Reports are basic building blocks of the evaluation system, and are retained by the OPE. Within six months of the completion of every project, program officers prepare a synthesis of the outcomes, based on the following set of questions:

- What results were achieved?
- Did the activities and results follow the project objectives and methodologies?
- Did the project result in building institutional, managerial, or individual scientific capabilities?
- How have the results been disseminated?
- What lessons were learned that might enable IDRC to develop better projects in the future or to improve its policies and practices?
- What follow-up action, if any, is required?
- Was the project worthwhile?

These questions ensure that each report contains certain basic information, while allowing the program officer scope to include subjective values and opinions.

Division Strategic Reviews

Division Strategic Reviews are an integral part of the Centre's processes for strategic planning, and program and policy review. They provide an

analysis of a program division's past activities and future intentions that serves as a strategic context for the two-year operational plan. Each division is reviewed about every six years. There are three main elements to such a review:

The **Division Strategic Plan** is the core document prepared by the division. It includes an analysis and evaluation of past activities and the division's environment. It also presents the division's mission, objectives, and strategy, as well as covering relevant questions pertaining to implementation, resource allocation, and interdivisional cooperation.

The **Internal Audit Review** examines operational and management control systems from the viewpoint of efficiency, effectiveness, and economy. The audit also serves as a reference document for the External Review.

The **External Review** is conducted by a panel selected by the President's Committee. It reviews the division's mandate, past and present performance, and strategic intentions as set out in the Divisional Strategic Plan. OPE acts as secretariat for the review panel. Completed reviews are considered by the Board of Governors in approving strategic directions for the program divisions.

Selective In-depth Studies

Even though a number of informal evaluations take place at events such as divisional staff meetings and workshops, it is expected that the divisions will identify in their evaluation plans a number of subjects meriting formal in-depth study. Several of these formal studies are completed each year, either by Centre staff or by external personnel.

Such in-depth analyses usually focus on effectiveness and program planning issues. They provide a broad assessment of the value of specific projects and programs relative to their original objectives.

Studies on broader issues may be initiated by the Centre's Board of Governors, the President's Committee, the Program Committee, the regional offices, or OPE. The purpose of these studies is usually to facilitate management decision-making in planning future Centre policies and

resource allocation. Such centre-wide studies are conducted or coordinated by OPE.

Another form of strategic review deals with programs that, either geographically or in terms of their subject matter, cut across the Centre's divisional and regional structure. Such studies are conducted at the request of the Board of Governors.

Role of the Regional Offices

The Centre's regional offices are active participants in the evaluation system. They assist in designing and initiating studies, and identify evaluators. The consolidated evaluation plan for the Centre includes specific studies to be carried out by the regional offices.

They also carry out selective case studies aimed at documenting the longer term developmental effect of Centre-supported activities. In addition, the regional offices conduct national and institutional studies, and collaborate with OPE on planning and evaluation activities within their region.

Dissemination

Because evaluation information is an important component of the Centre's planning and decision-making processes, it is part of OPE's role to ensure that evaluative findings are disseminated and used effectively. The key lies at the planning stage. Evaluation plans are disseminated throughout the Centre to enable the divisions to draw on and contribute to each other's work. Evaluation assessments clearly identify a client and purpose for each study. Ultimately, evaluation findings are used for program planning, both short and long term.

All completed studies are retained by OPE and entered in the OPEIS system. OPEIS is a computer database designed to provide access to evaluation findings. The database contains three types of information: project or program information, details of the evaluation report, and findings of the evaluation report. The goal is to enable users of OPEIS to search for information on a specific study or on issues that have been addressed in several studies.

Copies of completed studies are kept by OPE, which readily considers all requests for access to them. Many of the studies are summarized and published by the Centre for wider consumption in the form of Evaluation Abstracts. These contain a brief description of the project or program, the evaluation methodology, and the major findings. Numerous papers prepared under the auspices of OPE are also available.

> "It is essential ... in the present era of scarce financial, manpower and infrastructural resources, to review periodically the whole agricultural research process, including planning, execution, and impact. It is becoming increasingly apparent that agricultural research monitoring and evaluation must be an integral part of the research itself."[3]

For more information

For more detailed information about IDRC's evaluation system, write to

Office of Planning and Evaluation
International Development Research Centre
PO Box 8500
Ottawa, Ont., Canada
K1G 3H9

Quotes are from *Evaluation in National Agricultural Research*, IDRC-254e. (1) p. 59, Kamphol Andulavidhaya, Rungruang Isarangkura, Preeyanuch Apibunyopas, and Nittaya Dulyasatit (Bangkok, Thailand); (2) p. 50, A. Appa Rao (Hyderabad, India); (3) p. 34, M.L. Kyomo, A.L. Doto, and C.L. Keswani (Gaborone, Botswana).

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CRDI

CANADA

Le système d'évaluation

Constituer la base de connaissances

Depuis sa création en 1970, le Centre de recherches pour le développement international a appuyé plusieurs milliers de projets dans plus de 100 pays. Il est essentiel de pouvoir compter sur un système coordonné d'évaluations pour s'assurer que les connaissances tirées de ces travaux sont bien comprises et utilisées efficacement.

Le système d'évaluation alimente la mémoire collective du Centre, soutient la recherche en cours et contribue aux processus de la planification et de la prise de décisions. Il s'agit d'un système décentralisé et souple faisant appel à une vaste gamme d'outils et de techniques, qui dépendent des buts visés par les études d'évaluation. La coordination de ce système est l'une des principales fonctions du Bureau de la planification et de l'évaluation (BPÉ) du Centre. Voici les éléments clés du système qui sont décrits dans cette brochure:

- plans divisionnaires d'évaluation
- profils d'évaluation
- rapports de fin de projet
- examens stratégiques de division
- études approfondies sélectives

« Pour mesurer l'attrait de la recherche en tant qu'investissement, il nous faut en mesurer à la fois les coûts et le rendement. Les chiffres des coûts, tout au moins pour ce qui est de dépenses publiques, sont connus et ne posent donc pas de problèmes majeurs. Il en est tout autrement pour évaluer les connaissances car ces dernières ne se présentent pas sous la forme d'une unité facile à mesurer. »[1]

Juillet 1990

Outre la coordination de ces activités et l'exécution d'études à l'échelle du Centre, le BPÉ participe sur demande (et à l'occasion fournit des fonds) à des études d'évaluation exécutées par les divisions de programme ou les bureaux régionaux. Il tient à jour un répertoire des rapports, publie les conclusions des études sous la forme d'abrégés d'évaluation et est responsable de la base de données du Centre sur l'évaluation (OPEIS).

L'un des rôles importants joués par ce système est d'aider à la constitution de capacités d'évaluation dans les pays en développement en favorisant la participation de chercheurs du Tiers-Monde au processus chaque fois que c'est possible. Cela permet également de s'assurer de l'utilité et de la pertinence des résultats pour les chercheurs des pays en développement.

Définition de l'évaluation

L'évaluation post-projet consiste en la cueillette et l'analyse systématiques de l'information lorsqu'une activité a pris fin. Elle permet de mesurer la « valeur » d'une activité sur les plans de l'efficacité, des résultats, de la pertinence et des effets — positifs ou négatifs, anticipés ou imprévus. Autrement dit, l'évaluation post-projet a pour objet de réunir de l'information qui permet de savoir comment les choses se sont passées et dans quelles conditions.

L'évaluation a pour objet fondamental de faciliter et d'améliorer la planification et l'élaboration des politiques à tous les niveaux, tant au Centre que dans les institutions qu'il appuie. En raison du vaste éventail d'activités et d'institutions qui reçoivent son aide, le Centre ne favorise pas une méthode d'évaluation donnée. Comme il n'est pas toujours possible d'obtenir des données quantitatives concrètes, l'évaluation doit souvent se fonder sur des données moins quantifiables mais tout aussi valables en s'appuyant sur les points de vue et les perceptions des participants aux projets et des bénéficiaires. Dans la mesure du possible, des données qualitatives et quantitatives sont employées pour corroborer les résultats.

Pour le Centre, le processus d'évaluation est en soi une force susceptible d'entraîner le développement des compétences, et tous les participants à un projet représentent une importante ressource en matière d'évaluation. Au lieu de rechercher « l'objectivité pure », le Centre accorde la priorité à la participation des intéressés à ses évaluations.

Bien que le rapport de fin de projet soit obligatoire, le Centre n'a pas de formule toute faite qui permettrait de déterminer à l'avance quels sont les projets qui seront évalués et à quel moment ils le seront. Entre autres questions qui permettent d'établir quels sont les projets et programmes qui devraient être évalués, mentionnons les suivantes: Est-il nécessaire de prendre une décision concernant un problème donné ou une caractéristique d'un programme? Quelle a été l'importance des investissements dans le passé? Quels sont les engagements et les intentions futures du Centre? D'autres facteurs viennent s'y greffer, dont le coût, le but et la probabilité que l'étude donne des résultats utiles.

> « Il semble donc impossible de formuler des procédés d'évaluation simples, clairs et précis qui conviendront à toutes les situations. Si cet exercice était simple et facile, on ne verrait pas des pays en être encore réduits à lutter et à avancer à l'aveuglette, malgré plus d'un demi-siècle d'expérience en recherche agricole derrière eux. Nous ne devrions toutefois pas laisser ces difficultés nous décourager mais bien plutôt relever le défi que représente la mise au point de méthodes fiables et réalisables pour l'évaluation... »[2]

Coordination de l'évaluation

Certaines questions de politiques qui sont importantes pour le Centre sont employées par le BPE pour la coordination et l'analyse des évaluations, parmi lesquelles à l'heure actuelle:

- la définition et la compréhension du processus de la recherche au service du développement;
- les manières d'accroître la probabilité que les résultats des activités subventionnées par le Centre soient effectivement utilisés;
- la détermination de mécanismes permettant d'accroître les capacités de recherche dans le Tiers-Monde;
- l'évaluation des avantages de la concentration des ressources du Centre;
- la vérification de l'efficacité de l'aide apportée par le Centre aux programmes en Afrique, comparativement aux autres régions;

- la détermination de systèmes de recherche et de capacités de recherche pour les petits pays;
- la compréhension des coûts, des avantages et des conditions souhaitables pour diverses catégories de recherche, y compris la recherche interdisciplinaire sur les systèmes, participative, fondamentale, appliquée et autre;
- la détermination des conditions préalables à la création et au bon fonctionnement des réseaux de recherche;
- la décentralisation du personnel, la délégation de pouvoirs aux bureaux régionaux et la délégation de responsabilités aux institutions du Tiers-Monde;
- la recherche d'un équilibre entre les ressources consacrées à la prestation des programmes et celles qui sont destinées au soutien administratif.

Deux documents, le plan divisionnaire d'évaluation et le profil d'évaluation, constituent les principaux outils employés par le BPÉ pour coordonner les activités d'évaluation.

Plans divisionnaires d'évaluation

Chacune des divisions de programme du Centre prépare un plan divisionnaire d'évaluation. Ces plans contribuent à la définition des relations entre les évaluations proposées par les différentes divisions. Ils permettent également de cerner les domaines dans lesquels des évaluations pourraient être effectuées pour compléter les études en matière de politiques ou de planification. Ces plans peuvent couvrir des périodes allant d'un an à trois ans.

Les plans peuvent comprendre des études qui portent sur des projets donnés, des groupes de projets ou des programmes, ou encore sur des questions qui touchent toutes les activités de projet au sein des divisions. Les produits de la mise en oeuvre de ces plans ont pour but de répondre aux exigences de la planification divisionnaire en matière d'information: le plan opérationnel bisannuel et surtout les plans stratégiques à long terme.

Profils d'évaluation

Ce profil équivaut en quelque sorte à une brève appréciation du

projet et il est préparé avant que des ressources ne soient engagées à l'égard d'une évaluation donnée. Les profils d'évaluation sont préparés en collaboration avec l'auteur de la demande d'étude, quel qu'il soit, et ils sont conservés par le BPÉ. Ils donnent des précisions sur l'étude envisagée, notamment l'objet et les clients, les points à aborder, la méthodologie à employer et les répercussions en matière de ressources. Le profil a pour but soit d'indiquer la meilleure façon de procéder à l'étude, soit de conclure qu'il n'est pas nécessaire d'exécuter une étude en bonne et due forme.

Outils d'évaluation

Les trois outils essentiels employés dans le processus d'évaluation sont le rapport de fin de projet, l'examen stratégique de division et l'étude approfondie sélective.

Rapports de fin de projet

Les rapports de fin de projet, qui constituent la pierre angulaire du système d'évaluation, sont conservés par le BPÉ. Dans les six mois qui suivent l'achèvement d'un projet, l'administrateur de programme prépare une synthèse des résultats obtenus, en se fondant sur les questions suivantes:

- Quels résultats ont été obtenus?
- Les activités et les résultats du projet ont-ils respecté la méthodologie et les objectifs établis?
- Le projet a-t-il contribué à créer des compétences scientifiques au niveau institutionnel, gestionnel ou individuel?
- Comment les résultats ont-ils été diffusés?
- Quelles leçons tirées du projet pourraient permettre au CRDI d'élaborer de meilleurs projets à l'avenir ou d'améliorer ses politiques et ses pratiques?
- Quelles sont les mesures de suivi nécessaires, s'il y a lieu?
- Le projet valait-il la peine?

Grâce à ces questions, on s'assure que chaque rapport contient certains renseignements de base tout en donnant la possibilité à l'administrateur de programme de faire connaître son opinion et de faire appel à des valeurs d'ordre subjectif.

Examens stratégiques de division

Les examens stratégiques de division font partie intégrante du processus de la planification stratégique et des études des programmes et politiques du Centre. Ils fournissent une analyse des activités passées d'une division et de ses intentions futures, qui sert de contexte stratégique au plan opérationnel bisannuel. Chaque division fait l'objet d'un tel examen tous les six ans environ. Trois éléments principaux sont abordés:

Le **plan stratégique de division** est le document de base que prépare la division. Il comprend une analyse et une évaluation de ses activités passées et du contexte divisionnaire. Il présente également la mission, les objectifs et la stratégie de la division, tout en abordant des questions pertinentes concernant la mise en oeuvre, l'affectation des ressources et la collaboration interdivisionnaire.

L'**examen de la Vérification interne** étudie les systèmes de contrôle gestionnel et opérationnel du point de vue de leur efficience, de leur efficacité et de leur rentabilité. Il peut également servir de document de référence pour l'examen externe.

L'**examen externe** est exécuté par un groupe dont les membres sont choisis par le Comité du président. Il examine le mandat de la division, ses réalisations passées et présentes et ses intentions stratégiques, en se fondant sur le plan stratégique de division. Le BPÉ est le secrétariat du groupe. Une fois terminés, ces examens sont pris en considération par le Conseil des gouverneurs pour l'approbation des orientations stratégiques des divisions de programme.

Études approfondies sélectives

Même si un bon nombre d'évaluations informelles sont effectuées lors de certaines activités comme les réunions du personnel des divisions et les ateliers, on s'attend à ce que les divisions signalent, dans leur plan d'évaluation, certains sujets dignes de faire l'objet d'une étude approfondie en bonne et due forme. Plusieurs de ces études sont exécutées chaque année par des employés du Centre ou par des personnes de l'extérieur.

Ces analyses approfondies se concentrent habituellement sur des questions relatives à l'efficacité et à la planification des programmes. Elles donnent une appréciation générale de la valeur de certains projets et programmes par rapport aux objectifs qui ont été fixés à l'origine.

Des études sur de grandes questions peuvent être entreprises à la demande du Conseil des gouverneurs du Centre, du Comité du président, du Comité du programme, des bureaux régionaux ou du BPÉ. Ces études ont en général pour but d'aider la direction à prendre des décisions en ce qui concerne la planification des politiques et l'affectation des ressources du Centre. Le BPÉ est chargé de l'exécution ou de la coordination de telles études à l'échelle du Centre.

Une autre forme d'examen stratégique a trait aux programmes qui, sur le plan géographique ou en raison du domaine qu'ils abordent, transcendent la structure divisionnaire et régionale du Centre. Ces études sont exécutées à la demande du Conseil des gouverneurs.

Rôle des bureaux régionaux

Les bureaux régionaux jouent un rôle actif dans le système d'évaluation. Ils aident à la conception des études, en prenant parfois l'initiative, et indiquent les personnes en mesure d'exécuter les évaluations. Le plan intégré d'évaluation du Centre comprend certaines études qui doivent être exécutées par les bureaux régionaux.

Les bureaux régionaux exécutent également des études de cas sélectives qui visent à documenter les répercussions à plus long terme qu'ont sur le développement les activités subventionnées par le Centre. Ils exécutent en outre des études sur des pays et des institutions, et ils collaborent avec le BPÉ à des activités de planification et d'évaluation menées dans leur région.

Diffusion

L'information tirée des évaluations étant un élément important du processus de la planification et de la prise de décisions au Centre, une partie du rôle du BPÉ consiste à veiller à ce que les conclusions des évaluations soient diffusées et utilisées efficacement. La clé de l'utilisation réside au stade de la planification. Les profils d'évaluation identifient clairement le client et le but de l'étude. En fin de compte, les conclusions des évaluations sont utilisées pour la planification des programmes, soit à court ou long terme.

Toutes les études proposées sont conservées par le BPÉ, une fois terminées, et introduites dans le système OPEIS, qui est une base de données informatisée visant à donner accès aux conclusions des

évaluations. Cette base contient trois sortes d'information: des renseignements sur le projet ou le programme, des données détaillées sur le rapport d'évaluation et les conclusions du rapport d'évaluation. On entend ainsi permettre aux utilisateurs de l'OPEIS d'obtenir de l'information soit sur une étude donnée, soit sur des questions ayant été traitées dans plusieurs études.

Le BPÉ conserve des exemplaires des études terminées et il prend volontiers en considération les demandes de consultation de ces documents. Bon nombre de ces études sont résumées et publiées par le Centre sous forme d'abrégés d'évaluation en vue d'une plus large diffusion. Ces abrégés contiennent une brève description du projet ou programme et de la méthodologie d'évaluation, ainsi qu'un aperçu des principales conclusions. On peut également se procurer de nombreux documents préparés sous les auspices du BPÉ.

« Il est essentiel ... à une époque où les ressources financières, en personnel et en infrastructure, sont rares, de revoir périodiquement la totalité du processus de la recherche agricole, y compris sa planification, son exécution et son impact. Il devient de plus en plus évident que le contrôle et l'évaluation de la recherche agricole doivent faire partie intégrante de cette dernière. »[3]

Pour plus de renseignements

Pour obtenir plus de renseignements sur le système d'évaluation du CRDI, s'adresser au:

Bureau de planification et d'évaluation
Centre de recherches pour le développement international
CP 8500, Ottawa (Ontario)
Canada K1G 3H9

Les citations sont tirées de l'ouvrage *Évaluation de la recherche agricole à l'échelle nationale*, IDRC-254f. (1) p. 59, Kamphol Andulavidhaya, Rungruang Isarangkura, Preeyanuch Apibunyopas et Nittaya Dulyasatit (Bangkok, Thailand); (2) p. 50, A. Appa Rao, (Hyderabad, India); (3) p. 35, M.L. Kyomo, A.L. Doto et C.L. Keswani (Gaborone, Botswana).

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Notes on

IDRC'S EXPERIENCE WITH RESEARCH NETWORKS

Terry Smutylo
Office of Planning & Evaluation
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International Development Research Centre, Ottawa, Canada

NOTES ON IDRC'S EXPERIENCE WITH RESEARCH NETWORKS

1. SOME DEFINITIONS

" *... Information networks constitute a group of individuals or organizations that share a common interest and exchange information in various forms on a regular or organized basis.*" Akhtar, S. 1990

"*A network consists of independently administered units which have formed operational links either for the purpose of maximizing resources or improving the efficiency of their internal procedures ...* " Akhtar, S. 1990

" *... an agricultural network would be a voluntary association of research organizations with sufficient common objectives to be willing to adjust current research programs and invest resources in network activities in the belief that they will meet their objectives more efficiently than when conducting all research alone.*" Banta, G. 1982

"*An agricultural network is a group of individuals or institutions linked together because of commitment to collaborate in solving a common agricultural problem or set of problems and to use existing resources more effectively", (this defn. includes scientist, technicians, extension workers, farmer as well as institutions (national, international regional, donors, govt. agencies and agribusiness)*

Faris, D.G. 1990

2. IDRC'S USE OF RESEARCH NETWORKS

Since its inception, IDRC has funded a wide variety of networks and network-related activities. It has initiated networks itself; responded to requests from developing country institutions for network support; and it has joined with other donor agencies in creating and supporting research and research-supporting networks. These networks have enabled members to share information, germ plasm, technologies or research methodologies; or to combine efforts in order to solve problems of mutual concern. IDRC has come to see networking as an indispensable tool in the efficient pursuit of scientific research and technological adaptation for development purposes; and has found networks to be a highly adaptable mechanism for linking and meeting the needs of researchers in developing countries. In its first ten years of operation, 43% of IDRC's program budgets were associated with network activities. The Agriculture, Food and Nutrition Sciences Division and the Social Sciences Division were the most active in supporting research networks during that period. In the years since 1980, IDRC has supported approximately 75 research and scientific information networks globally, about one-third of these are in Latin America and the Caribbean.

IDRC has supported four basic types of networks:

1) horizontal networks linking institutions with similar interests working in the same general field of research;

2) vertical networks of institutions working interdependently on different aspects of the same problem or on different problems associated with the same commodity;

3) information networks to provide centralized information management services to members and users enabling them to contribute and share information as needed; and

4) training networks which provide training and supervisory services to participants working independently in their own research areas.

Within each of these four general categories there is wide latitude for variation. As voluntary associations of members sharing common interests who agree to exchange information or resources over a period of years, the form a network takes will differ depending on members' needs, the resources available and the kind of contacts established.

Whatever their basis, networks are not static but tend to evolve as participants learn more about each other, build relationships and discover opportunities. A number of authors have suggested three stages of networking based on the level to which the members are integrated, the degree to which they interact and collaborate. The stage of least integration consists of informal contact among members and exchange of information or material (germ plasm) through correspondence, electronic links or other media. The next stage, a greater degree of integration, would involve scientific consultation, meetings, and participatory links such as users groups or consultation workshops on particular problems. The third, or highest, level of integration would include more formalized relationships and exchanges, such as collaborative research, technical assistance, sharing of resources, and joint training arrangements.

In IDRC's experience, networks tend to move towards a higher level of integration as they mature. The process reflects growth in research capacity; in mutual confidence; and in the flow of benefits from the network. Authors who have referred to the different levels of network integration include: Broadbent (1988); Faris (1988); Winkleman (1986); Leonoff (1990)

3. LESSONS LEARNED

3.1 Advantages

IDRC has found research networks to be effective in overcoming the isolation of scientists working in undeveloped research environments; pulling together the critical mass of resources necessary to address particular research areas; and in coordinating the use of research resources at a regional level. Networks can also increase the efficiency in the use of human and financial resources by reducing duplication of effort: by broadening the national base of experience and scientific knowledge; by economies of scale; and by making a greater impact achievable because of the greater attention accorded to multi-country projects. In 1987, a "Report on Networks" by Glover, Schaeffer, Krugman and Vitta identified a number of other benefits from research networks in the social sciences:

- **Comparative research:** key research findings which might be overlooked or taken for granted in a single case have much more validity if through horizontal networks there are complementary findings in other areas.

- **Specialization:** network components can concentrate on specific aspects of the problem, allowing for more effective use of resources. (vertical networks)

- **Methodological development:** by broadening the base of experience, both problems and experimental solutions, the opportunities for making methodological breakthroughs are increased.

- **Economies of scale:** by increasing the number of projects on one theme, a donor can afford investments which would not be feasible for single projects.

- **Transfer of knowledge from advanced to less developed countries:** the involvement of NIC's and LDC's in a network can result in learning both in research content and in research methodologies among the members.

- **Institutional surrogates:** in poor research environments a network can provide the researcher with elements which the home institution does not provide (access to literature, peer review, publication outlets, international contacts, etc.).

3.2 Disadvantages

Network studies indicate a number of cautions in the use of research networks:

- The cost of coordination in terms of financial and human resources can be high.

- Coordination of a research network can be a daunting task, finding the appropriate institution or the individual with the skills to administer a network is often difficult.

- Non-productive networking activities can proliferate.

- Care should be taken to ensure that the network does not displace research priority setting at the national level, rather it should build on national priorities in defining its mandate and objectives.

4. RECOMMENDED COMPONENTS FOR SUCCESSFUL NETWORK OPERATION

Given that a network represents a dynamic set of relationships serving the shared interests of its members, the possible variations and combinations of network features are many. It is not helpful, therefore, to try to specify in advance the particular form of network to be applied in specific instances. It is of primary importance, however, to establish a process whereby the network takes a form which effectively responds to the needs, shared interests and capabilities of its participants. The literature on networks abounds in advice on how to promote successful networks. Based on some of the recent articles and a survey of IDRC's recorded experience (as found in existing documents, papers and reports) some important considerations relative to initiating a research network are identified below.

4.1 Membership

The identification and recruitment of appropriate members for a network is of critical importance. Network members must share a common problem or objective and be able to jointly define a common approach or strategy for finding solutions. In short, network members should be strongly motivated through self-interest to participate.

The network members should possess both long-term commitment and adequate technical competence to contribute to finding a solution. The inclusion of both strong and weak members in a network can work provided an appropriate balance is maintained and provisions are made for informal and formal training

depending on the scientific capacities of its members. Institutions in developed countries can make important contributions to developing country research networks. The participation of the Northern institutions needs to be managed carefully, however, in order that network relationships continue to serve the goals of the full network membership.

4.2 Coordination

Coordination of network activities can cost up to 40% of network expenses. Although often costly, some form of coordination mechanism is essential. (Multidisciplinary networks add another level of required coordination in the technical sphere. This may be provided by the coordinator or by a technical consultant hired specifically for the task.) Coordination should either be handled by an experienced individual within a small coordinating secretariat or by an established institution. Wherever located, the coordinating function must be impartial in discharging its responsibilities; it must tread a fine line between providing control and direction while, at the same time, being accountable and providing service to the network membership.

4.3 Direction

The key to ensuring that the network continues to serve the shared interests of its participants is participatory governance. Feedback and communication mechanisms are necessary to give members a say in the overall direction and management of the network. Leadership for the network can be provided by an advisory group or steering committee. This component defines the network's research agenda, provides a forum for cooperatively planning the use of shared resources, and fosters interdependence and trust to grow among network members. The mandate of the steering committee should contain a level of flexibility allowing it to evolve with the network, its capabilities and the interests of its members.

4.4 Structure and Organization

A strong management administrative structure is essential to coordinate activities, manage resources and to ensure equal opportunity and equitable distribution of benefits among all segments of the network. The roles of network members and the responsible units must be well defined. The coordinator, the steering committee or advisory group, the project leaders, the project advisors/consultants and the network membership all need to know their own responsibilities and those of their fellow participants. Here too, flexibility and participation are key considerations so that roles and responsibilities can evolve as the network

matures. Given the diversity of networking models each with its own spectrum of variations, rather than trying to impose a specific structure on a nascent network, the initial framework should reflect the benefits expected and the level of integration anticipated by its members. This will provide the node around which the network can crystallize.

Consideration should be given to providing a mechanism to conduct external reviews of network functions every three to four years to ensure efficiency and cost effectiveness in its operation.

4.5 Donor Support

External resources are usually required, in addition to the contributions, made by national participants, to set up and coordinate network activities. In providing such support, donor agencies should recognize that a long term funding commitment is required. Networks take typically two to three years to begin to function effectively at a preliminary level of integration. Commitments of funding for periods in excess of 10 years may be required to bring a network to adequate levels of maturity, integration and viability. Whatever the intentions of the donor agencies with regard to the amount and the duration of funding, the time period for which funding will be made available should be stated at the outset. The network can then begin planning, at the very early stages, ways to ensure its post-donor viability. As the network matures and evolves, donors should be flexible in the activities they are willing to support. There may be considerable shifts in funding requirements. For example, training programs, essential to many networks, may give way to the need for technical assistance or small research grants as scientific capabilities strengthen.

4.6 Relationship to National Research Systems

While network structure and programming should reflect research priorities at the national level, it is unrealistic to expect national programs to relocate large amounts of their resources to fund network activities. Hence external support is necessary. The willingness on the part of national research systems to commit some funding, resources and staff to network activities should be balanced by a recognition of the exigencies faced by the national systems. The national members which should be seen as the basic network units.

Where an international research centre is a part of a research network (often as a coordinator) it becomes imperative and challenging to divide labour between the national and the international research institutions. As national research systems grow in capacity and compete more aggressively for scarce research funding, the onus is more and more on donor agencies to demonstrate the need for

international "centres of excellence". With the international agricultural research centres IDRC has found a trend towards more limited, specialized roles vis-à-vis the national agricultural research system, and a correspondingly increasing interest among national agencies in joint, collective action. Collaboration at the regional level is often seen as more useful and effective than the creation of international centres which may duplicate national programs or sap potential resources. It is essential therefore that, in the creation of a new network, clear and conscious attention be paid to this relationship: the division of labour and responsibilities within the network between an international centre and the national members.

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